

| Supplementary File 1: Notice of Compliance with conditions for new drugs and new indications for existing drugs | | | | | | | | | | | | | | |
|---|------------|-------------------------------|-----------------------------|------------|----------------------|-----------------------|----------------------------------|---------------------------------|-----------------------------|--------------------------------------|-------------------------------------|--|--------------------------------|---------------------------------|
| Generic name | Brand name | Indication | ATC 2nd level | Date NOC/c | Date NOC/c fulfilled | Date NOC/c withdrawal | Time to NOC/c fulfillment (days) | Time to NOC/c withdrawal (days) | Reason for NOC/c withdrawal | New drug (ND) or new indication (NI) | Biologic (B) or small molecule (SM) | Significant therapeutic advance (STA)/moderate therapeutic advance (MTA)/minimal, no therapeutic advance (NTA) | Date New Drug Submission filed | Time in approval process (days) |
| delavirdine | Rescriptor | HIV | antivirals for systemic use | 7/22/1998 | 7/22/2003 | | 1826 | | | ND | SM | NTA | | |
| nevirapine | Viramune | HIV | antivirals for systemic use | 9/4/1998 | 9/13/2004 | | 2201 | | | ND | SM | NTA | | |
| recombinant factor VIIa | Niastase | clotting disorder | antihemorrhagics | 2/12/1999 | 5/19/2006 | | 2653 | | | ND | B | NTA | | |
| alteplase | Activase | stroke | antithrombotic agents | 2/16/1999 | 1/26/2005 | | 2171 | | | NI | B | | | |
| abacavir | Ziagen | HIV | antivirals for systemic use | 6/4/1999 | 9/10/2001 | | 829 | | | ND | SM | NTA | | |
| zanamivir | Relenza | influenza | antivirals for systemic use | 11/2/1999 | 8/26/2003 | | 1393 | | | ND | SM | NTA | | |
| delavirdine | Rescriptor | HIV | antivirals for systemic use | 4/25/2000 | 7/22/2003 | | 1183 | | | NI | SM | NTA | | |
| riluzole | Rilutek | amyotrophic lateral sclerosis | other nervous system drugs | 8/30/2000 | 11/29/2007 | | 2647 | | | ND | SM | STA | | |
| amprenavir | Agenerase | HIV | antivirals for systemic use | 3/1/2001 | 7/5/2004 | | 1222 | | | ND | SM | NTA | | |
| imatinib | Gleevec | gastrointestinal stromal | antineoplastic agents | 9/20/2001 | 12/29/2004 | | 1196 | | | ND | SM | STA | | |

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| | | tumor | | | | | | | | | | | | |
| amprenavi r | Agenerase | HIV | antivirals for systemic use | 11/21/200 1 | 7/5/2004 | | 957 | | | NI | SM | NTA | | |
| celecoxib | Celebrex | prevention of familial adenomat ous polyposis | antineopla stic agents | 5/28/2002 | | 12/17/200 4 | | 934 | Increase in cardiovasc ular risk | NI | SM | NTA | | |
| imatinib | Gleevec | chronic myelogeno us leukemia - blast crisis | antineopla stic agents | 8/7/2002 | 5/31/2018 | | 5776 | | | NI | SM | STA | | |
| bicalutami de | Casodex | prostate cancer | endocrine therapy | 11/25/200 2 | | 8/18/2003 | | 266 | Increase in mortality | NI | SM | NTA | | |
| tenofovir | Viread | HIV | antivirals for systemic use | 3/18/2003 | 7/20/2005 | | 855 | | | ND | SM | NTA | | |
| imatinib | Gleevec | newly diagnosed chronic myeloid leukemia | antineopla stic agents | 10/8/2003 | 6/17/2010 | | 2444 | | | NI | SM | STA | | |
| gefitinib | Iressa | lung cancer | antineopla stic agents | 12/17/200 3 | 12/18/200 9 | | 2193 | | | ND | SM | NTA | | |
| agalsidase alfa | Replagal | Fabry disease | other alimentary tract and metabolis m products | 2/6/2004 | | 6/20/2014 | | 3787 | Discontinu ed from market | ND | B | STA | | |

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|--|----------|---|-----------------------|-----------|------------|------------|------|------|--|----|----|-----|--|--|
| celecoxib | Celebrex | prevention of familial adenomatous polyposis | antineoplastic agents | 5/20/2004 | | 12/17/2004 | | 211 | Increase in cardiovascular risk | NI | SM | NTA | | |
| anastrozole | Arimidex | breast cancer | endocrine therapy | 6/20/2004 | 12/2/2008 | | 1626 | | | NI | SM | NTA | | |
| memantine | Ebixa | Alzheimer's disease | psychoanalitics | 12/8/2004 | | 4/21/2011 | | 2325 | Challenges with patient recruitment based on availability of generics and alternative treatments and the ethics of enrolling Alzheimer's patients into placebo-controlled trials | ND | SM | NTA | | |
| bortezomib | Velcade | multiple myeloma | antineoplastic agents | 1/27/2005 | 9/11/2007 | | 957 | | | ND | SM | NTA | | |
| letrozole | Femara | adjuvant treatment of breast cancer in postmenopausal women | endocrine therapy | 4/1/2005 | 12/17/2010 | | 2086 | | | NI | SM | NTA | | |
| delta-9-tetrahydrocannabinol/cannabidiol | Sativex | neuropathic pain in patients with Multiple Sclerosis | analgesics | 4/15/2005 | 5/31/2018 | | 4794 | | | ND | SM | NTA | | |
| capecitabine | Xeloda | breast cancer | antineoplastic agents | 12/7/2005 | 10/23/2008 | | 1051 | | | NI | SM | NTA | | |

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|-----------------------------------|--------------|---|---|----------------|----------------|--|------|--|--|----|----|-----|-----------|-----|
| bortezomi b | Velcade | multiple myeloma | antineopla stic agents | 4/24/2006 | 9/11/2007 | | 505 | | | NI | SM | NTA | | |
| exemestan e | Aromasin | breast cancer | endocrine therapy | 5/12/2006 | 6/6/2008 | | 756 | | | NI | SM | NTA | | |
| darunavir | Prezista | HIV | antivirals for systemic use | 7/28/2006 | 2/11/2009 | | 929 | | | ND | SM | MTA | | |
| sorafenib | Nexavar | renal cancer | antineopla stic agents | 7/28/2006 | 6/12/2009 | | 1050 | | | ND | SM | NTA | | |
| sunitinib | Sutent | renal cancer | antineopla stic agents | 8/17/2006 | 4/23/2010 | | 1345 | | | NI | SM | MTA | | |
| letrozole | Femara | adjuvant treatment of postmeno pausal women with hormone receptor- positive early breast cancer | endocrine therapy | 10/6/2006 | 12/17/201 0 | | 1533 | | | NI | SM | NTA | | |
| deferasirox | Exjade | thalassem ia (iron chelation) | all other therapeuti c products | 10/18/200 6 | 12/2/2016 | | 3698 | | | ND | SM | NTA | | |
| docetaxel | Taxotere | node- positive breast cancer | antineopla stic agents | 12/14/200 6 | 5/31/2018 | | 4186 | | | NI | SM | NTA | | |
| hepatitis B immune globulin | HepaGam B | prevention of recurrence of hepatitis B | immune sera and immunogl obulins | 1/19/2007 | 5/31/2018 | | 4150 | | | ND | B | | | |
| levodopa/c arbidopa | Duodopa | Parkinson's disease | anti- parkinson drugs | 3/1/2007 | 3/12/2014 | | 2568 | | | ND | SM | NTA | | |
| dasatinib | Sprycel | chronic myeloid leukemia | antineopla stic agents | 3/26/2007 | 11/19/200 9 | | 969 | | | ND | SM | STA | 3/29/2006 | 362 |

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|--|-----------|---|-----------------------------|------------|-----------|----------|------|------|--------------------------|----|----|-----|-----------|-----|
| imatinib | Gleevec | chronic myeloid leukemia (CML) in chronic phase (pediatric) | antineoplastic agents | 4/24/2007 | 2/21/2013 | | 2130 | | | NI | SM | STA | | |
| delta-9-tetrahydrocannabinol/cannabidiol | Sativex | adjunctive analgesic treatment | analgesics | 8/1/2007 | 5/31/2018 | | 3956 | | | NI | SM | NTA | | |
| nelarabine | Atriance | leukemia (T-cell acute lymphoblastic leukemia) or lymphoma | antineoplastic agents | 9/22/2007 | 5/31/2018 | | 3904 | | | ND | SM | | 9/28/2005 | 724 |
| nesiritide | Natrecor | symptomatic Acute Decompensated Heart Failure (ADHF) | cardiac therapy | 11/8/2007 | | 8/1/2012 | | 1728 | Discontinued from market | ND | B | NTA | 2/5/2007 | 276 |
| pregabalin | Lyrica | central neuropathic pain | antiepileptics | 11/9/2007 | 6/29/2010 | | 963 | | | NI | SM | NTA | | |
| raltegravir | Isentress | HIV | antivirals for systemic use | 11/27/2007 | 3/4/2009 | | 463 | | | ND | SM | MTA | 4/18/2007 | 223 |
| lenalidomide | Revlimid | anemia due to myelodysplastic syndromes | immunosuppressants | 1/17/2008 | 6/6/2013 | | 1967 | | | ND | SM | STA | 2/12/2007 | 339 |
| panitumumab | Vectibix | metastatic colorectal carcinoma | antineoplastic agents | 4/3/2008 | 5/31/2018 | | 3710 | | | ND | B | NTA | 4/28/2006 | 706 |
| sunitinib | Sutent | renal cancer | antineoplastic agents | 5/1/2008 | 4/23/2010 | | 722 | | | NI | SM | MTA | | |

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| idebenone | Catena | Friedreich's Ataxia | psychoanal eptics | 7/23/2008 | | 2/27/2013 | | 1680 | Discontinu ed by company | ND | SM | NTA | 10/26/200 7 | 271 |
| nilotinib | Tasigna | chronic myeloid leukemia | antineopla stic agents | 9/9/2008 | 11/30/201 1 | | 1177 | | | ND | SM | NTA | 12/5/2006 | 644 |
| bevacizum ab | Avastin | HER2- negative breast cancer | antineopla stic agents | 2/6/2009 | | 11/25/201 1 | | 1022 | No reason given | NI | B | NTA | | |
| aztreonam for inhalation solution | Cayston | cystic fibrosis patients with chronic pulmonary Pseudomo nas aeruginosa infections | antibacteri als for systemic use | 7/17/2009 | 5/17/2011 | | 669 | | | ND | SM | NTA | 3/25/2008 | 479 |
| imatinib | Gleevec | adjuvant treatment of adult patients with GIST | antineopla stic agents | 12/22/200 9 | 5/31/2018 | | 3082 | | | NI | SM | | | |
| bevacizum ab | Avastin | glioblasto ma | antineopla stic agents | 3/24/2010 | 5/31/2018 | | 2990 | | | NI | B | NTA | | |
| nilotinib | Tasigna | chronic phase Philadelphi a chromoso me positive chronic myeloid leukemia | antineopla stic agents | 7/22/2010 | 8/18/2011 | | 392 | | | NI | SM | NTA | | |

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|---------------|-----------|--|-----------------------|-----------|------------|--|------|--|--|----|----|-----|-----------|-----|
| everolimus | Afinitor | subependymal giant cell astrocytoma (SEGA) associated with tuberous sclerosis (TS) | immunosuppressants | 6/20/2011 | 5/31/2018 | | 2537 | | | NI | SM | NTA | | |
| nilotinib | Tasigna | newly diagnosed Philadelphia chromosome positive chronic myeloid leukemia | antineoplastic agents | 6/23/2011 | 8/19/2015 | | 1518 | | | NI | SM | NTA | | |
| dasatinib | Sprycel | adult patients with newly diagnosed Philadelphia chromosome positive (Ph+) chronic myeloid leukemia (CML) in chronic phase | antineoplastic agents | 7/19/2011 | 11/26/2015 | | 1591 | | | NI | SM | STA | | |
| crizotinib | Xalkori | Non-small cell lung cancer | antineoplastic agents | 4/25/2012 | 11/18/2015 | | 1302 | | | ND | SM | NTA | 6/8/2011 | 322 |
| remestemcel-L | Prochymal | acute Graft versus Host Disease (aGvHD) | unassigned | 5/17/2012 | 5/31/2018 | | 2205 | | | ND | B | | 9/15/2011 | 245 |

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|---------------------|----------|--|-----------------------------|------------|------------|--|------|--|--|----|----|-----|------------|-----|
| brentuximab vedotin | Adcetris | Hodgkin lymphoma (HL); systemic anaplastic large cell lymphoma (sALCL) | antineoplastic agents | 2/1/2013 | 5/31/2018 | | 1945 | | | ND | B | NTA | 4/11/2012 | 296 |
| eculizumab | Soliris | Paroxysmal nocturnal haemoglobinuria | immunosuppressants | 3/1/2013 | 6/30/2015 | | 851 | | | NI | B | NTA | | |
| romidepsin | Istodax | relapsed/refractory peripheral T-cell lymphoma | antineoplastic agents | 10/16/2013 | 5/31/2018 | | 1688 | | | ND | SM | NTA | 12/22/2011 | 664 |
| bosutinib | Bosulif | chronic, accelerated, or blast phase Ph+ CML | antineoplastic agents | 3/7/2014 | 5/31/2018 | | 1546 | | | ND | SM | NTA | 12/20/2011 | 808 |
| simeprevir | Galexos | hepatitic C | antivirals for systemic use | 1/30/2015 | 11/24/2017 | | 1029 | | | NI | SM | MTA | | |
| dabrafenib | Tafinlar | unresectable or metastatic melanoma | antineoplastic agents | 3/6/2015 | 5/13/2016 | | 434 | | | NI | SM | NTA | | |
| ceritinib | Zykadia | metastatic non-small cell lung cancer | antineoplastic agents | 3/27/2015 | 5/31/2018 | | 1161 | | | ND | SM | NTA | 6/16/2014 | 284 |
| idelalisib | Zydelig | follicular lymphoma | antineoplastic agents | 3/27/2015 | 5/31/2018 | | 1161 | | | ND | SM | NTA | 2/28/2014 | 392 |

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|---------------|-----------|--|--|------------|------------|--|------|--|--|----|----|-----|------------|-----|
| ponatinib | Iclusig | chronic phase, accelerated phase, or blast phase chronic myeloid leukemia, ALL | antineoplastic agents | 4/2/2015 | 5/31/2018 | | 1155 | | | ND | SM | MTA | 5/23/2013 | 679 |
| pembrolizumab | Keytruda | metastatic melanoma | antineoplastic agents | 5/19/2015 | 12/22/2017 | | 948 | | | ND | B | NTA | 6/23/2014 | 330 |
| ibrutinib | Imbruvica | relapsed or refractory mantle cell lymphoma | antineoplastic agents | 7/28/2015 | 9/12/2017 | | 777 | | | NI | SM | STA | | |
| daclatasvir | Daklinza | hepatic C | antivirals for systemic use | 8/13/2015 | 11/9/2016 | | 454 | | | ND | SM | MTA | 5/16/2014 | 454 |
| asfotase alfa | Strensiq | paediatric-onset hypophosphatasia | other alimentary tract and metabolism products | 8/14/2015 | 5/31/2018 | | 1021 | | | ND | B | STA | 11/14/2014 | 273 |
| blinatumomab | Blinicyto | Philadelphia chromosome-negative relapsed or refractory B precursor acute lymphoblastic leukemia (ALL) | antineoplastic agents | 12/22/2015 | 11/16/2017 | | 695 | | | ND | B | NTA | 1/30/2015 | 326 |
| pembrolizumab | Keytruda | metastatic melanoma | antineoplastic agents | 3/7/2016 | 5/31/2018 | | 815 | | | NI | B | NTA | | |
| trametinib | Mekinist | metastatic melanoma | antineoplastic agents | 3/11/2016 | 5/13/2016 | | 63 | | | NI | SM | NTA | | |

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| palbociclib | Ibrance | in combination with letrozole for breast cancer | antineoplastic agents | 3/16/2016 | 11/17/2016 | | 246 | | | ND | SM | NTA | 2/12/2015 | 398 |
| idarucizumab | Praxbind | reversal of the anticoagulant effects of dabigatran | all other therapeutic products | 4/29/2016 | 5/31/2018 | | 762 | | | ND | B | NTA | 3/4/2015 | 422 |
| nivolumab | Opdivo | metastatic melanoma | antineoplastic agents | 4/29/2016 | 5/31/2018 | | 762 | | | NI | B | STA | 3/16/2015 | 410 |
| olaparib | Lynparza | serous epithelial ovarian, fallopian tube or primary peritoneal cancer | antineoplastic agents | 4/29/2016 | 5/31/2018 | | 762 | | | ND | SM | MTA | | |
| daratumumab | Darzalex | multiple myeloma | antineoplastic agents | 6/29/2016 | 5/31/2018 | | 701 | | | ND | B | NTA | 9/14/2015 | 289 |
| osimertinib | Tagrisso | non-small cell lung cancer | antineoplastic agents | 7/5/2016 | 1/19/2018 | | 563 | | | ND | SM | MTA | 10/1/2015 | 278 |
| venetoclax | Venclexta | chronic lymphocytic leukemia (CLL) | antineoplastic agents | 9/20/2016 | 5/31/2018 | | 618 | | | ND | SM | NTA | 12/21/2015 | 274 |
| alectinib | Alecensaro | non-small cell lung cancer | antineoplastic agents | 9/29/2016 | 5/31/2018 | | 609 | | | ND | SM | | 11/12/2015 | 322 |
| nivolumab | Opdivo | metastatic melanoma | antineoplastic agents | 10/26/2016 | 5/31/2018 | | 582 | | | NI | B | STA | | |
| agalsidase alfa | Replagal | Fabry disease | other alimentary tract and metabolism products | 2/10/2017 | 5/31/2018 | | 475 | | | N1 | B | STA | | |

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|-----------------|-----------|--|--|------------|-----------|--|-----|--|--|----|---|-----|-----------|-----|
| atezolizumab | Tecentriq | metastatic urothelial carcinoma | other alimentary tract and metabolism products | 4/12/2017 | 5/31/2018 | | 414 | | | ND | B | | 7/18/2016 | 268 |
| durvalumab | Imfinzi | metastatic urothelial carcinoma | antineoplastic agents | 11/3/2017 | 5/31/2018 | | 209 | | | ND | B | | 2/16/2017 | 260 |
| nivolumab | Opdivo | metastatic melanoma | antineoplastic agents | 11/10/2017 | 5/31/2018 | | 202 | | | NI | B | STA | | |
| olaratumab | Lartruvo | advanced soft tissue sarcoma | antineoplastic agents | 11/23/2017 | 5/31/2018 | | 189 | | | ND | B | | 3/6/2017 | 262 |
| sebelipase alfa | Kanuma | lysosomal acid lipase (LAL) deficiency | other alimentary tract and metabolism products | 12/15/2017 | 5/31/2018 | | 167 | | | ND | B | | 3/23/2017 | 267 |
| avelumab | Bavencio | metastatic Merkel cell carcinoma | antineoplastic agents | 12/18/2017 | 5/31/2018 | | 164 | | | ND | B | | 3/23/2017 | 270 |

| Supplementary File 2: Drug approved under standard review process, 2005-2017 | | | | |
|---|-------------------|---------------------------------------|-------------------------------------|--|
| Generic name | Brand name | Date New Drug Submission filed | Date of Notice of Compliance | Time in approval process (days) |
| Acamprosate | Campral | 12/23/2005 | 3/16/2007 | 448 |
| Aclidinium | Tudorza genuair | 7/31/2012 | 7/29/2013 | 363 |
| Afatinib | Giotrif | 9/12/2012 | 11/1/2013 | 415 |
| Aflibercept | Eylea | 8/17/2011 | 11/8/2013 | 814 |
| Aflibercept | Zaltrap | 5/9/2012 | 2/12/2014 | 644 |
| Albiglutide | Eperzan | 5/24/2013 | 7/15/2015 | 782 |
| Albutrepenonacog Alfa | Idelvion | 2/9/2015 | 1/26/2016 | 351 |
| Alemtuzumab | Mabcampath | 11/1/2001 | 11/30/2005 | 1490 |
| Alirocumab | Praluent | 3/20/2015 | 4/11/2016 | 388 |
| Aliskiren | Rasilez | 4/20/2006 | 11/14/2007 | 573 |
| Alitretinoin | Toctino | 12/19/2007 | 11/13/2009 | 695 |
| Alogliptin | Nesina | 8/29/2012 | 11/27/2013 | 455 |
| Ambrisentan | Volibris | 4/3/2007 | 3/20/2008 | 352 |
| Anidulafungin | Eraxis | 11/30/2006 | 11/14/2007 | 349 |
| Anthrax immune globuline | Anthrasil | 11/24/2016 | 11/6/2017 | 347 |
| Antihemophilic Factor (Recombinant) Porcine Sequence | Obizur | 8/15/2014 | 10/14/2015 | 425 |
| Antihemophilic Factor (Recombinant), PEGylated | Adynovate | 12/2/2015 | 11/17/2016 | 351 |
| Antihemophilic factor, FC fusion protein | Eloctate | 7/30/2013 | 8/22/2014 | 388 |
| Apixaban | Eliquis | 10/5/2010 | 12/16/2011 | 437 |
| Apremilast | Otezla | 11/8/2013 | 11/12/2014 | 369 |
| Aprepitant | Emend | 9/12/2006 | 8/24/2007 | 346 |
| Aripiprazole | Abilify | 2/22/2008 | 7/9/2009 | 503 |

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|--|-----------|------------|------------|-----|
| Asunaprevir | Sunvepra | 5/16/2014 | 3/9/2016 | 663 |
| Axitinib | Inlyta | 6/28/2011 | 7/12/2012 | 380 |
| Azelastine and fluticasone | Dymista | 12/4/2013 | 10/23/2014 | 323 |
| Azilsartan | Edarbi | 3/28/2011 | 3/8/2012 | 346 |
| Belimumab | Benlysta | 7/15/2010 | 7/6/2011 | 356 |
| Bendamustine | Treanda | 9/8/2011 | 8/24/2012 | 351 |
| Benralizumab | Fasenra | 3/21/2017 | 2/22/2018 | 338 |
| Bepotastine | Bepreve | 8/19/2015 | 7/27/2016 | 343 |
| Besifloxacin | Besivance | 11/3/2008 | 10/23/2009 | 354 |
| Bilastine | Blexten | 5/11/2015 | 4/21/2016 | 346 |
| Botulinium antitoxin serotypes A, B,C, D, E, F and G | BAT | 12/22/2015 | 12/8/2016 | 352 |
| Brexpiprazole | Rexulti | 2/26/2016 | 2/16/2017 | 356 |
| Brivaracetam | Brivlera | 3/30/2015 | 3/9/2016 | 345 |
| Brodalumab | Siliq | 5/24/2016 | 3/6/2018 | 651 |
| Bromfenac | Prolensa | 4/4/2014 | 3/26/2015 | 356 |
| Cabazitaxel | Jevtana | 7/2/2010 | 6/16/2011 | 349 |
| Canagliflozin | Invokana | 7/27/2012 | 5/23/2014 | 665 |
| Capsular polysaccharide | Synflorix | 12/19/2007 | 12/11/2008 | 358 |
| Ceftobiprole | Zeftera | 7/16/2007 | 6/26/2008 | 346 |
| Ceftolozane Sulfate and Tazobactam Sodium | Zerbaxa | 9/15/2014 | 9/30/2015 | 380 |
| Certolizumab pegol | Cimzia | 2/28/2008 | 8/12/2009 | 531 |
| Ciclesonide | Alvesco | 9/28/2005 | 9/11/2006 | 348 |
| Clevidipine | Cleviprex | 10/7/2008 | 4/15/2011 | 920 |
| Clofarabine | Clolar | 5/8/2008 | 7/16/2009 | 434 |
| Coagulation factor IX (recombinant) pegylated | Rebinyn | 12/12/2016 | 11/29/2017 | 352 |

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|---|-----------|------------|------------|-----|
| Cobimetinib | Cotellic | 3/12/2015 | 2/22/2016 | 347 |
| Colesevelam | Lodalis | 10/9/2009 | 9/22/2011 | 713 |
| Collagenase clostridium histolyticum | Xiaflex | 6/7/2011 | 7/5/2012 | 394 |
| Conjugated estrogens and bazedoxifene acetate | Duavive | 12/4/2012 | 10/23/2014 | 688 |
| Dabigatran | Pradax | 6/19/2007 | 6/10/2008 | 357 |
| Dabrafenib | Tafinlar | 7/31/2012 | 7/16/2013 | 350 |
| Daclizumab beta | Zinbryta | 12/21/2015 | 12/8/2016 | 353 |
| Dapagliflozin | Forxiga | 12/7/2012 | 12/12/2014 | 735 |
| Daptomycin | Cubicin | 11/14/2005 | 9/24/2007 | 679 |
| Darifenacin | Enablex | 9/23/2003 | 11/14/2005 | 783 |
| Deferiprone | Ferriprox | 3/7/2013 | 2/13/2015 | 708 |
| Degarelix | Firmagon | 6/2/2008 | 11/16/2009 | 532 |
| Denosumab | Prolia | 1/14/2009 | 8/6/2010 | 569 |
| Desvenlafaxine | Pristiq | 10/16/2007 | 2/4/2009 | 477 |
| Dexlansoprazole | Dexilant | 8/11/2009 | 7/22/2010 | 345 |
| Dexmedetomidine | Precedex | 12/19/2008 | 12/9/2009 | 355 |
| Dienogest | Visanne | 8/21/2009 | 10/12/2011 | 782 |
| Difluprednate | Durezol | 11/20/2012 | 11/4/2013 | 349 |
| Dimethyl fumarate | Tecfidera | 4/16/2012 | 4/3/2013 | 352 |
| Dolutegravir | Tivicay | 12/17/2012 | 10/31/2013 | 318 |
| Doripenem | Doribax | 9/24/2007 | 9/2/2009 | 709 |
| Doxycycline | Efracea | 12/2/2010 | 11/14/2011 | 347 |
| Dulaglutide | Trulicity | 2/10/2014 | 11/10/2015 | 638 |
| Duloxetine | Cymbalta | 11/23/2006 | 11/1/2007 | 343 |
| Dupilumab | Dupixent | 12/16/2016 | 11/30/2017 | 349 |
| Edoxaban | Lixiana | 9/3/2015 | 11/4/2016 | 428 |
| Efalizumab | Raptiva | 4/17/2003 | 10/24/2005 | 921 |

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|---|-----------|------------|------------|-----|
| Efinaconazole | Jublia | 10/19/2012 | 10/2/2013 | 348 |
| Eliglustat | Cerdelga | 3/19/2015 | 4/21/2017 | 764 |
| Eltrombopag | Revolade | 12/8/2008 | 1/12/2011 | 765 |
| Eluxadoline | Viberzi | 12/11/2015 | 1/26/2017 | 412 |
| Elvitegravir, Cobicistat, Emtricitabine, Tenofovir Alafenamide Hemifumarate | Genvoya | 1/19/2015 | 11/27/2015 | 312 |
| Elvitgravir, Emtricitabine, Tenofovir, Cobicistat | Stribild | 12/19/2011 | 11/26/2012 | 343 |
| Empagliflozin | Jardiance | 4/17/2013 | 7/23/2015 | 827 |
| Emtricitabine | Emtriva | 9/21/2004 | 11/21/2005 | 426 |
| Eplerenone | Inspra | 3/8/2008 | 2/26/2009 | 355 |
| Eribulin | Halaven | 12/31/2010 | 12/14/2011 | 348 |
| Eslicarbazepine | Aptiom | 6/12/2013 | 7/8/2014 | 391 |
| Everolimus | Afinitor | 10/31/2008 | 12/14/2009 | 409 |
| Evolocumab | Repatha | 9/25/2014 | 9/10/2015 | 350 |
| Exenatide | Byetta | 4/6/2009 | 1/13/2011 | 647 |
| Ezogabine | Potiga | 10/31/2011 | 10/8/2012 | 343 |
| Fampridine | Fampyra | 12/7/2009 | 2/10/2012 | 795 |
| Febuxostat | Uloric | 8/31/2009 | 9/22/2010 | 387 |
| Ferumoxytol | Feraheme | 12/18/2009 | 12/8/2011 | 720 |
| Fesoterodine | Toviaz | 3/1/2011 | 2/9/2012 | 345 |
| Fidaxomicin | Dificid | 11/2/2011 | 6/7/2012 | 218 |
| Finaxofloxacin | Xtoro | 6/5/2014 | 3/11/2016 | 645 |
| Fingolimod | Gilenya | 3/23/2010 | 3/9/2011 | 351 |
| Flextouch (insulin degludec) | Tresiba | 9/13/2016 | 8/25/2017 | 346 |
| Flibanserin | Addyi | 11/18/2015 | 2/27/2018 | 832 |
| Florbetaben 18F | Neuraceq | 2/26/2016 | 2/22/2017 | 362 |

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|---|-------------------|------------|------------|------|
| Fluticasone | Avamys | 7/24/2006 | 8/14/2007 | 386 |
| Fluticasone and vilatnerol | Breo ellipta | 7/20/2012 | 7/3/2013 | 348 |
| Follitropin delta | Rekoverle | 12/9/2015 | 3/22/2018 | 834 |
| Fosaprepitant | Emend IV | 4/18/2008 | 4/1/2009 | 348 |
| Gadofosveset | Vasovist | 1/26/2005 | 10/31/2006 | 643 |
| Gadoterate Meglumine | Dotarem | 7/31/2015 | 11/25/2016 | 483 |
| Gadoxetate | Primovist | 2/2/2009 | 1/14/2010 | 346 |
| Galsulfase | Naglazyme | 9/28/2012 | 9/16/2013 | 353 |
| Golimumab | Simponi | 4/29/2008 | 4/7/2009 | 343 |
| Guselkumab | Tremfya | 12/25/2016 | 11/10/2017 | 320 |
| Haemagglutinin-Strain A | Arepranrix H5N1 | 7/5/2007 | 2/13/2013 | 2050 |
| Histrelin | Vantas | 7/2/2004 | 3/10/2006 | 616 |
| Human C1 esterase inhibitor | Berinert | 4/7/2008 | 5/31/2010 | 784 |
| Human papillomavirus 9 alent vaccine, recombinant | Gardasil 9 | 2/13/2014 | 2/5/2015 | 357 |
| Indacaterol | Onbrez breezhaler | 12/22/2010 | 12/6/2011 | 349 |
| Influenza vaccine | Flumist | 7/21/2009 | 6/22/2010 | 336 |
| Ingenol | Picato | 2/9/2012 | 1/30/2013 | 356 |
| Inotuzumab ozogamicin | Besponsa | 3/30/2017 | 3/15/2018 | 350 |
| Insulin detemir | Levemir | 12/13/2002 | 9/29/2005 | 1021 |
| Insulin glulisine | Apidra | 11/3/2003 | 4/12/2006 | 891 |
| Ioflupane | Datscan | 12/22/2016 | 12/7/2017 | 350 |
| Ipilimumab | Yervoy | 10/13/2010 | 2/1/2012 | 476 |
| Ivabradine | Lancora | 8/23/2013 | 12/23/2016 | 1218 |
| Ivermectin | Rosiver | 5/6/2014 | 4/22/2015 | 351 |
| Ixekizumab | Taltz | 6/5/2015 | 5/25/2016 | 355 |
| Japanese encephalitis vaccine | Ixiaro | 6/20/2008 | 10/29/2009 | 496 |
| Lacosamide | Vimpat | 3/17/2009 | 9/30/2010 | 562 |

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|--|-------------------------------|------------|------------|------|
| Lanreotide | Somatuline autogel | 5/24/2005 | 7/17/2006 | 419 |
| Lanthanum | Fosrenol | 11/4/2005 | 10/17/2006 | 347 |
| Lapatinib | Tykerb | 12/4/2006 | 5/15/2009 | 893 |
| Lenvatinib | Lenvima | 1/8/2015 | 12/22/2015 | 348 |
| Levomilnacipran | Fetzima | 8/13/2013 | 5/8/2015 | 633 |
| Lifitegrast | Xiidra | 10/28/2016 | 12/22/2017 | 420 |
| Linaclotide | Constella | 12/14/2012 | 12/2/2013 | 353 |
| Linagliptin | Trajenta | 8/17/2010 | 7/28/2011 | 345 |
| Liraglutide | Victoza - 1.2 mg pen-injector | 6/27/2008 | 5/21/2010 | 693 |
| Lisdexamfetamine | Vyvanse | 3/7/2008 | 2/19/2009 | 349 |
| Lixisenatide | Adlyxine | 4/26/2016 | 5/25/2017 | 394 |
| Lomitapide | Juxtapid | 11/21/2012 | 2/4/2014 | 440 |
| Lonococog Alfa | Afstyla | 12/23/2015 | 12/12/2016 | 355 |
| Loteprednol | Alrex | 10/3/2007 | 12/23/2008 | 447 |
| Lubiprostone | Amitiza | 10/31/2014 | 10/14/2015 | 348 |
| Lumiracoxib | Prexige | 11/15/2005 | 11/2/2006 | 352 |
| Lurasidone | Latuda | 6/30/2011 | 6/13/2012 | 349 |
| Lutropin Alfa | Luveris | 3/31/2000 | 6/24/2005 | 1911 |
| Macitentan | Opsumit | 12/24/2012 | 11/6/2013 | 317 |
| Meningococcal oligosaccharides conjugated | Menveo | 12/22/2008 | 5/21/2010 | 515 |
| Meningococcal polysaccharide conjugate vaccine | Nimenrix | 3/21/2012 | 3/5/2013 | 349 |
| Mepolizumab | Nucala | 11/19/2014 | 12/3/2015 | 379 |
| Methoxy Polyethylene glycol-epoetin beta | Mircera | 6/8/2006 | 3/31/2008 | 662 |
| Methyl aminolevulinate | Metvix | 12/27/2006 | 2/26/2009 | 792 |
| Micafungin | Mycamine | 6/27/2002 | 5/22/2007 | 1790 |
| Mifepristone and Misoprostol | Mifegymiso | 11/14/2012 | 7/29/2015 | 987 |

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|---|--------------------|------------|------------|-----|
| Migalastat | Galafold | 7/15/2016 | 9/5/2017 | 417 |
| Mirabegron | Myrbetriq | 3/19/2012 | 3/6/2013 | 352 |
| Multicomponent meningococcal B vaccine | Bexsero | 5/26/2011 | 12/6/2013 | 925 |
| Naloxegol | Movantik | 8/30/2013 | 6/2/2015 | 641 |
| Nebivolol | Bystolic | 12/23/2011 | 12/21/2012 | 364 |
| Necitumumab | Portrazza | 3/29/2016 | 3/16/2017 | 352 |
| Neisseria meningitidis GRP B recombinant lipoprotein 2086 subfamily A, neisseria meningitidis GRP B recbombinant 2086 subfamily B | Trumenba | 5/31/2016 | 10/5/2017 | 492 |
| Nepafenac | Nevanac | 5/4/2007 | 4/17/2008 | 349 |
| Netupitant, palonestrone | Akynzeo | 10/13/2016 | 9/28/2017 | 350 |
| Nintedanib | Ofev | 7/9/2014 | 6/25/2015 | 351 |
| Nusinersen | Spinraza | 11/10/2016 | 6/29/2017 | 231 |
| Obinutuzumab | Gazyva | 10/2/2013 | 11/25/2014 | 419 |
| Ocrelizumab | Ocrevus | 9/16/2016 | 8/14/2017 | 332 |
| Ofatumumab | Arzerra | 1/21/2011 | 3/9/2012 | 413 |
| Olmesartan | Olmotec | 8/3/2007 | 10/28/2008 | 452 |
| Olodaterol | Striverdi respimat | 6/28/2012 | 6/11/2013 | 348 |
| Ozenoxacin | Ozanex | 4/1/2016 | 5/1/2017 | 395 |
| Paliperidone | Invega | 9/27/2006 | 9/26/2007 | 364 |
| Paliperidone | Invega sustenna | 4/24/2009 | 6/30/2010 | 432 |
| Palonosetron | Aloxi | 3/31/2011 | 3/14/2012 | 349 |
| Pantoprazole | Pantaloc M | 5/4/2004 | 4/22/2005 | 353 |
| Paricalcitol | Zemplar | 11/3/2003 | 3/31/2005 | 514 |
| Pasireotide | Signifor | 2/8/2011 | 9/23/2013 | 958 |
| Pazopanib | Votrient | 6/16/2009 | 5/27/2010 | 345 |

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|--|-----------------|------------|------------|-----|
| Peginterferon Beta-1A | Plegridy | 7/31/2013 | 8/10/2015 | 740 |
| Peramivir | Rapivab | 1/25/2016 | 1/5/2017 | 346 |
| Perampanel | Fycompa | 2/29/2012 | 4/4/2013 | 400 |
| Plerixafor | Mozobil | 12/21/2010 | 12/8/2011 | 352 |
| Polidocanol | Varithena | 8/20/2014 | 8/4/2015 | 349 |
| Prasugrel | Effient | 4/3/2008 | 4/16/2010 | 743 |
| Pregabalin | Lyrica | 12/1/2003 | 6/3/2005 | 550 |
| Propiverine | Mictoryl | 10/23/2015 | 1/5/2017 | 440 |
| Prucalopride | Resotran | 12/17/2010 | 12/7/2011 | 355 |
| Radium-223 dichloride | Xofigo | 12/21/2012 | 12/12/2013 | 356 |
| Ramucirumab | Cyramza | 7/28/2014 | 7/16/2015 | 353 |
| Rasagiline | Azilect | 10/17/2005 | 8/17/2006 | 304 |
| Recombinant human coagulation Factor IX, FC fusion protein | Alprolix | 3/28/2013 | 3/20/2014 | 357 |
| Recombinant human papillomavirus | Cervarix | 4/1/2009 | 2/3/2010 | 308 |
| Reslizumab | Cinqair | 7/3/2015 | 7/20/2016 | 383 |
| Retapamulin | Altargo | 2/12/2007 | 3/19/2008 | 401 |
| Ribociclib | Kisqali | 3/17/2017 | 3/2/2018 | 350 |
| Rilpivirine | Edurant | 8/13/2010 | 7/21/2011 | 342 |
| Rivaroxaban | Xarelto | 12/31/2007 | 9/15/2008 | 259 |
| Rivastigmine | Exelon patch 10 | 11/1/2006 | 11/29/2007 | 393 |
| Roflumilast | Daxas | 8/10/2009 | 11/23/2010 | 470 |
| Rotavirus vaccine | Rotarix | 11/1/2006 | 10/9/2007 | 342 |
| Rotaviruses | Rotateq | 8/4/2005 | 8/1/2006 | 362 |
| Rotigotine | Neupro | 3/30/2011 | 3/21/2013 | 722 |
| Rufinamide | Banzel | 7/6/2010 | 6/22/2011 | 351 |
| Rupatadine | Rupall | 8/4/2015 | 7/20/2016 | 351 |
| Sarilumab | Kevzara | 1/29/2016 | 1/12/2017 | 349 |
| Saxagliptin | Onglyza | 7/31/2008 | 9/14/2009 | 410 |
| Secukinumab | Cosentyx | 12/17/2013 | 2/27/2015 | 437 |

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|--------------------------|------------|------------|------------|------|
| Selexipag | Uptravi | 2/13/2015 | 1/20/2016 | 341 |
| Semaglutide | Ozempic | 1/19/2017 | 1/4/2018 | 350 |
| Senapine | Saphris | 11/12/2009 | 10/7/2011 | 694 |
| Sevelamer | Renvela | 6/30/2008 | 7/7/2010 | 737 |
| Sildenafil | Rapaflo | 12/21/2009 | 1/11/2011 | 386 |
| Simvastatin | Nuwiq | 11/1/2013 | 10/23/2014 | 356 |
| Sitagliptin | Januvia | 1/20/2006 | 12/14/2007 | 693 |
| Sitaxsentan | Thelin | 10/24/2005 | 5/30/2007 | 583 |
| Sodium oxybate | Xyrem | 12/9/2003 | 8/5/2005 | 605 |
| Solifenacin | Vesicare | 2/25/2005 | 2/20/2006 | 360 |
| Stiripentol | Diacomit | 10/8/2010 | 12/21/2012 | 805 |
| Sucroferric oxyhydroxide | Velphoro | 12/22/2016 | 1/5/2018 | 379 |
| Sugammadex | Bridion | 12/23/2014 | 2/5/2016 | 409 |
| Sulesomab | Leukoscan | 3/25/1998 | 1/17/2005 | 2490 |
| Tafeluprost | Saflutan | 6/10/2013 | 5/26/2014 | 350 |
| Taliglucerase Alfa | Elelyso | 6/18/2013 | 5/29/2014 | 345 |
| Tapentadol | Nucynta CR | 12/14/2009 | 12/2/2010 | 353 |
| Tedizolid | Sivextro | 4/1/2014 | 3/17/2015 | 350 |
| Telavancin | Vibativ | 10/3/2007 | 9/29/2009 | 727 |
| Teriflunomide | Aubagio | 11/29/2012 | 11/14/2013 | 350 |
| Tesamorelin | Egrifta | 6/17/2011 | 4/29/2014 | 1047 |
| Thrombin alfa | Recothrom | 11/4/2008 | 12/15/2009 | 406 |
| Tigecycline | Tygacil | 5/18/2005 | 9/14/2006 | 484 |
| Tocilizumab | Actemra | 4/1/2008 | 4/30/2010 | 759 |
| Tofacitinib | Xeljanz | 4/3/2012 | 4/17/2014 | 744 |
| Tolvaptan | Samsca | 8/18/2010 | 7/25/2011 | 341 |
| Trabectedin | Yondelis | 6/1/2009 | 5/13/2010 | 346 |
| Tramadol | Tramacet | 11/9/2004 | 7/20/2005 | 253 |
| Trametinib | Mekinist | 8/3/2012 | 7/18/2013 | 349 |
| Tropium | Trosec | 11/22/2004 | 1/10/2006 | 414 |
| Turoctocog alfa | Zonovate | 12/16/2013 | 12/8/2014 | 357 |
| Ulipristal | Fibristal | 6/29/2012 | 6/24/2013 | 360 |

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|---------------------------------------|------------------|------------|------------|-----|
| Umecliniium and vilanterol | Anoro ellipta | 1/10/2013 | 12/23/2013 | 347 |
| Ustekinumab | Stelara | 12/28/2007 | 12/12/2008 | 350 |
| Vandetanib | Caprelsa | 1/27/2011 | 1/12/2012 | 350 |
| Varenicline | Champix | 2/3/2006 | 1/24/2007 | 355 |
| Varicella-zoster virus glycoprotein E | Shingrix | 11/17/2016 | 10/13/2017 | 330 |
| Vedolizumab | Entyvio | 11/21/2013 | 1/29/2015 | 434 |
| Velaglucerase alfa | VPRIV | 10/21/2009 | 10/1/2010 | 345 |
| Vernakalant | Brinavess | 1/4/2016 | 3/13/2017 | 434 |
| Vilazodone | Viibryd | 7/29/2014 | 7/16/2015 | 352 |
| Vismodegib | Erivedge | 4/2/2012 | 7/12/2013 | 466 |
| Vorapaxar | Zontivity | 10/31/2014 | 5/13/2016 | 560 |
| Vorinostat | Zolinza | 6/27/2008 | 6/11/2009 | 349 |
| Vortioxetine | Trintellix | 9/28/2012 | 10/22/2014 | 754 |
| Zucapsaicin | Civanex (Zuacta) | 10/30/2008 | 7/15/2010 | 623 |