

	BRAND NAME (OTHER NAMES)	COMPANY/SPONSOR	INDICATION
FDA	Aranesp™ (darbepoetin alfa, NESP)	Amgen	Anemia caused by kidney disease or some forms of chemotherapy.
	Ganite (gallium nitrate)	Genta Inc.	For treatment of cancer-related hypercalcemia.
	REVLIMID® (CC-5013, lenalidomide)	Celgene Corporation	For use with dexamethasone for the treatment of myeloma patients who have had at least one prior therapy.
	VELCADE® (bortezomib, PS-341)	Millennium Pharmaceuticals	In June 2008, VELCADE®'s approval was expanded to include previously untreated myeloma patients.
	EVEREST - VELCADE®	Millennium Pharmaceuticals	Assessing the efficacy, safety, and tolerability of retreatment with VELCADE®
III	AMD-3100 Mozobil®	Genzyme	Stem Cell mobilizer used with G-CSF prior to transplant. Trial now closed to enrollment; accrual complete.
	Bondronat (ibandronate)	Hoffmann-La Roche	Randomized study of Bondronat versus Zometa for patients with malignant bone disease experiencing moderate to severe pain.
	DOXIL®* (doxorubicin liposome HCl injection)	Ortho Biotech	Clinical trials using Doxil in place of Adriamycin in VAD; in combination with VELCADE® and dex; and in combination with vincristine, dex, and thalidomide.
	DOXIL® ,CAELYX and VELCADE or VELCADE Monotherapy	Ortho Biotech	For patients whose disease has progressed after an initial response to at least 1 line of prior therapy or was refractory to initial treatment.
Genasense® (oblimersen, Bcl-2 antisense, G3139)	Genta, Inc. & Aventis	Combined with dexamethasone for treatment of relapsed myeloma.(Enrollment completed.)	
REVLIMID® (CC-5013, lenalidomide)	Celgene Corporation	A multicentre, randomised, double-blind, placebo-controlled, 3-arm parallel group study to determine the efficacy and safety of REVLIMID® in combination with melphalan and prednisone versus placebo plus melphalan and prednisone in subjects with newly diagnosed multiple myeloma who are 65 years or older. (Note: This study is being conducted outside the US.)	
tanespimycin (KOS-953, 17-AAG)	Kosan Biosciences	Open-label trial for MM patients in first relapse with tanespimycin plus bortezomib (Velcade) compared to bortezomib alone.	
Thalomid®* (thalidomide)	Celgene Corporation and the NCI	Randomized study of thalidomide + prednisone as maintenance therapy after auto-transplant; randomized study of combination chemotherapy with or without thalidomide (Europe only)..	
II/III	KOS-953 (tanespimycin, 17-AAG)	Kosan Bioscience	Tanespimycin in combination with bortezomib for patients who have been treated with and progressed following at least three prior therapies; prior regimens must include lenalidomide and bortezomib.
	MAGE-A3 and NY-ESO-1 (peptide vaccination)	University of Arkansas and Celgene Corp.	Subcutaneous peptide vaccination in combination with DT-PACE and autotransplant.
II	AMG162 (denosumab, osteoprotegerin, OPG)	Amgen	For treatment of patients with bone metastases due to advanced solid tumors or multiple myeloma and for the treatment of patients with relapsed or plateau-phase multiple myeloma.
	Aplidin®	PharmaMar, SA	For relapsed or refractory myeloma
	AP23573	Ariad Pharmaceuticals	Rapamycin analog for refractory or recurrent malignancy, including myeloma and lymphoma.
	Atiprimod	CalistoPharmaceuticals	For patients with refractory multiple myeloma who have failed two or more prior therapies.
	ATN-224	Attenuo, LLC	Given in combination with Velcade to patients who are relapsed from or refractory to Velcade.
	Avastin™ (bevacizumab, rhuMab-VEGF)	Genentech Inc.	Given in combination with Velcade to patients with relapsed/refractory mm.
	azacitidine (Vidaza®)	Investigator initiated	Drug previously approved in US for MDS being used in clinical trial for rel/ref mm in Melbourne, Australia.
	Bexsar (Iodine I 131 tositumomab)	GlaxoSmithKline, U of Michigan	Radioactive antibody to CD20-expressing cells for patients with newly diagnosed or relapsed multiple myeloma.
	Campath-1H (alemtuzumab, monoclonal antibody CD52)	NCI and Fred Hutchinson Cancer Research Institute	Used before allo transplant to prevent GVHD
	carfilzomib (PR-171)	Proteolix	Study of carfilzomib in relapsed and refractory mm at St. Vincent' s Hospital in NY.
	CC4047 (formerly "Actimid") (pomalidomide)	Mayo Clinic	For patients with relapsed disease who have had three or fewer previous regimens.
	Celebrex (celecoxib)	National Cancer Institute	Prevention study for patients with MGUS or smoldering myeloma.
	CG53135-05	CuraGen	For treatment of oral mucositis in patients undergoing autologous stem cell transplant
	CNTO 328	Centocor	Given in combination with VELCADE® to patients with relapsed/refractory mm.
	CTY997	Cytosia Limited	Prospective, single-arm, open-label trial of a vascular-disrupting agent in the treatment of relapsed/refractory mm.
	dasatinib (Sprycel™; BMS-354825)	Bristol-Myers Squibb	BCR/ABL and Src tyrosine kinase inhibitor for treatment of relapsed or plateau phase MM.
	Dendritic Cell Vaccine	Arkansas Cancer Research Center	Autologous dendritic cells for high-risk multiple myeloma.
	DLI (donor lymphocyte infusion)	National Cancer Institute	For relapse following allo transplant.
	elotrombopag (SB-497115; "115")	GlaxoSmithKline	Small-molecule drug that mimics the activity of thrombopoietin (TPO) to promote growth and production of platelets.
	Erbuitx, cetuximab	Imclone	Monoclonal antibody targeted to the EGFR. Trial is open to all stages of myeloma; patient must have had at least one prior treatment with disease progression.
	Ethiol® (amifostine)	MedImmune, Inc.	Cytoprotective agent to allow higher-dose melphalan in high-dose therapy with auto-transplant.
	FR901228 (desipeptide)	National Cancer Institute	Novel chemotherapy agent for relapsed/refractory myeloma.
	Gallium Malolate	Titan Pharmaceuticals	Treatment of myeloma-related bone disease.
	Genasense (oblimersen, Bcl-2 antisense, G3139)	Genta, Inc.	Trials combining Genasense with other regimens in relapse setting.
	GM-CSF (Leukine)	US Oncology	Maintenance therapy post auto transplant for MM
	GVAX	Cell Genesys, Inc.	Newly diagnosed myeloma patients undergoing transplant.
	INC018424 (JAK2-inhibitor)	Incyte Corporation	Small molecule Janus kinase inhibitor for patients with rel/ref mm.
	ITF2357	Italfarmaco	Histone deacetylase inhibitor given as monotherapy to patients with relapsed or progressive mm.
	Kineret™ (anakinra)	Amgen	Mayo (Rochester) study of IL-1beta antagonist for smoldering/indolent MM
	KIR-Ligand Mismatched Haplo-Identical Natural Killer Cells	Arkansas Cancer Research Center	For relapse after single or tandem transplant and for high-risk multiple meloma.
	KLH vaccine (keyhole limpet hemocyanin)	National Cancer Institute	Low or intermediate risk myeloma patients undergoing autotransplant.
	LBH589	Novartis	HDAC inhibitor for patients with relapsed/refractory myeloma who have received at least two prior lines of therapy and whose disease has progressed on the latest therapy.
	mapatumumab (HGS-ETRI; TRM-1; HGS1012)	Human Genome Sciences	Monoclonal antibody to TRAIL-R1 used in combination with bortezomib in patients with relapsed or refractory myeloma.
	Neotrofin® (leteprinim potassium)	NeolTherapeutics	For treatment of chemotherapy-induced peripheral neuropathy. (Enrollment completed.)
	Neulasta® (pegfilgrastim, pegylated G-CSF)	Amgen	Pegylated G-CSF (filgrastim) for stem cell mobilization prior to harvest.
	Nexavar® (BAY 43-9006, sorafenib, sorafenib tosylate)	Bayer and Onyx Pharmaceuticals	Oral therapy targeted to receptor tyrosine kinases involved with both tumor cell proliferation and angiogenesis; for patients with relapsed or refractory myeloma.
	O-6-benzyl-guanine	National Cancer Institute and Pacific Pharmaceuticals	Novel chemotherapy for treatment of relapsed myeloma.
	Panzem™ (2-methoxyestradiol, 2ME2)	EntreMed, Inc.	Antiangiogenesis agent for treatment of relapsing myeloma.
	PD 0332991	Pfizer	In combination with Velcade and dexamethasone in patients who have received at least one prior treatment for mm.
	perifosine (KRX-0401)	Keryx Pharmaceuticals, Inc.	Akt pathway inhibitor known as an alkylphosphocholine. Ph II safety and efficacy trial with perifosine alone and in combination with dexamethasone.
	PI-88	Progen Industries Limited	Phase II trial of VEGF inhibitor completed in Australia; early planning stages in US.
	Prochymal	Ostris Therapeutics	For treatment of GVHD (graft versus host disease) following allo transplant.
	Proleukin® (IL-2, Interleukin-2)	National Cancer Institute and Chiron	For advanced myeloma as part of auto or syngeneic transplant.
	PTK787	Novartis and Schering, AG	Novel oral angiogenesis inhibitor as post-transplant maintenance following high-dose therapy and autologous SCT.
	PXD101	CuraGen and Topolarget A/S	Small molecule histone deacetylase inhibitor for MM patients who have failed at least two prior treatment regimens.
	Quadramet® (EDTMP, samarium-153 ethylene diamine tetramethylene phosphonate Samarium)	Mayo Clinic, Rochester, MN	In combination with standard high-dose chemotherapy for patients undergoing stem cell transplant.
RAD001 (everolimus)	Novartis	mTOR (mammalian target of Rapamycin) inhibitor for patients with relapsed/refractory mm	
REVLIMID® (CC-5013, lenalidomide)	Celgene	In combination with Bixian and dexamethasone for newly-diagnosed myeloma.	
Rituxan (rituximab)	NCI	High-dose cyclophosphamide in combination with rituximab in patients with primary refractory, high-risk, or relapsed myeloma; also being studied for the treatment of peripheral neuropathy in patients with MGUS.	
SCIO-469	Scios, Inc.	Relapsed, refractory MM	
sorafenib		See Phase II Nexavar.	
sunitinib (sunitinib malate, Sutent®)	NCI	Multicenter efficacy trial of oral agent previously approved for GIST and kidney cancer.	
Temodar® (temozolomide)	Schering-Plough Corp.	Combined with prednisone for relapsed or refractory myeloma. Study closed to enrollment.	
THALOMID®* (thalidomide)	Celgene Corporation	Used with dexamethasone as induction therapy before, and with prednisone as maintenance therapy after high-dose therapy with stem cell transplant.	
VEGF Trap (NSC 724770)	Regeneron	Open-label safety and efficacy study for patients with relapsed or refractory multiple myeloma.	
VELCADE® (bortezomib, PS-341, LDP-341, MLN-341)	Millennium Pharmaceuticals, Inc.	Trials for frontline and maintenance therapy..	
Xcytrin (motexafin gadolinium)	Pharmacylics	Relapsed and refractory myeloma.	
XL999	Exelixis, Inc.	Potent small molecule inhibitor of recepto tyrosine kinases FGF, VEGF, and PDGF being evaluated in patients with relapsed or refractory mm.	
ZIO-101	ZIOPHARM, Inc.	Multi-center trial of small-molecule organic arsenic.	
I/II	Actimid™ (CC-4047)	Celgene Corporation	Immunomodulatory agent for relapsed/refractory myeloma. Trials only in UK.
	Amplimexon (imexon)	AmpliMed Corp.	Rapamycin analog administered IV.
	AVE1642	Sanofi-Aventis	Anti-IGF-1R Monoclonal Antibody combined with bortezomib for patients with rel/ref MM
	AVN944	Avalon Pharmaceuticals	Open-label, repeat-dose escalation, safety and tolerability trial for patients with advanced hematological malignancies.
	BrevaRex®	AltaRex	Trials planned for monoclonal antibody against MUC1 antigen.
	Brostallicin (PNU-166196)	Pharmacia and NCI	For the treatment of recurrent or refractory multiple myeloma.
	CB304 (noscapine)	Cougar Biotechnology	Oral alkaloid derived from opium; trial for relapsed/refractory mm. Site: NY Presbyterian Cornell/Weill Med. Center, PI Ruben Niesvizky.
	CERA (Continuous Erythropoiesis Receptor Activator)	Roche	Treatment of cancer-related anemia
	CNTO 328	Centocor	Monoclonal antibody to IL-6
	Curcumin (diferuloyl-methane)	MD Anderson CC	Present in turmeric and yellow mustard, inhibits NF-kappaB.
	Defibrotide	Gentium S.p.A.	Used as a MM cell sensitizer in combination with melphalan, prednisone, thalidomide as salvage treatment in advanced myeloma.
	GCS-100LE	GlycoGenesys, Inc.	Dose-escalation study of polysaccharide-based (carbohydrate) agent for relapsed/refractory myeloma.
	hLL1 (anti-CD74 mAb; IMMU 115)	Immunomedics	Open-label, multi-center study of a humanized monoclonal antibody to the CD74 myeloma cell surface antigen for patients with recurrent or refractory multiple myeloma who have failed at least two prior standard systemic treatments
	HuMax-CD38 (human IgG1, k antibody)	Genmab A/S	Antibody to the CD 38 molecule, which is highly expressed on the surface of mm cells.
	hydroxychloroquine (plaqueulil)	NCI	FDA-approved anti-inflammatory drug for malaria, lupus, and rheumatoid arthritis in trials with Velcade for rel/ref mm. (For WNICT, you should add that site is Abramson Cancer Center at the University of Pennsylvania, Edward Stadmauer PI, contact tel 215-662-7910.)
	Idiotype vaccination + mini-allo transplant	University Clinic of Navarre, Pamplona, Spain	Patients (either newly-diagnosed or in partial response following autologous transplantation) with HLA full-matched, sibling donor.
milatuzumab (humanized anti-DC74 monoclonal antibody)	Immunomedics, Inc.	To determine safety and efficacy of the naked antibody for the treatment of myeloma before conjugating the antibody with a drug or toxin (see IMMU-110 in preclinical)	
P276-00	Nicholas Piram India Ltd (NPIL)	Study to determine safety and efficacy of intravenous Cdk4-D1 and Cdk1-B inhibitor. Study sites limited to Canada	
Quadramet (samarium Sm-153 lexidronam)	Cytogen Corporation	For the treatment of bone pain associated with metastatic bone disease in patients with recurrent or refractory myeloma.	
simvastatin (Zocor®)	Investigator	Danish trial to assess effect of high-dose simvastatin on bone metabolism and markers of disease in mm.	
Stemgen	Amgen	Tested abroad as stem cell booster; protocols pending in US.	
Tac-Ig	ZymoGenetics	Fusion protein given to patients with relapsed/refractory myeloma	
temsirolimus (Torisel™, CCI-779)	Wyeth	m-TOR inhibitor in combination with bortezomib (Velcade) for rel/ref MM.	
Trisenox™ (arsenic trioxide injection)	Cephalon Oncology	With vitamin C for relapsed and refractory multiple myeloma.	
VELCADE® (bortezomib,PS-341, LDP-341, MLN-341)	Millennium Pharmaceuticals	With Adriamycin and dex as front-line therapy. (UK only)	
VELCADE® (bortezomib,PS-341, LDP-341, MLN-341)	Millennium Pharmaceuticals	As maintenance therapy after auto-transplant in patients with intermediate or advanced MM.	
VQD-001 (sodium stibogluconate, SSG)	VioQuest Pharmaceuticals, Inc.	Targeted to protein tyrosine phosphatases; safety, efficacy, and tolerability trial for solid tumors, lymphoma, and myeloma.	
I	ID09C3	GPC Biotech	Anti-major histocompatibility complex (MHC) class II monoclonal antibody that has received orphan medicinal product designation for the treatment of myeloma by the European Medicines Agency.
	Allomune System	Biofransplant	To facilitate acceptance of donor stem cells.
	anti-IGF-1R mAb (CP-571,871); monoclonal antibody to insulin-like growth factor-1 receptor	Pfizer	Relapsed and refractory MM.
	anti-KiR mAb (1-7F9)	Novo Nordisk	Safety and tolerability study for patients with relapsed/refractory MM
	AP2454	Ariad Pharmaceuticals	Maximum tolerated dose of AP2454 in CML and other hematologic malignancies.
	ARRY-614	Array BioPharma	Orally active p38/Tie2 inhibitor in dose escalation trial.
	AVE1642	Sanofi-Aventis	Anti-IGF-1R Monoclonal Antibody combined with bortezomib for patients with rel/ref MM.Sites: University Hospital, Nantes, France; University Hospital, Lille, France; University Hospital, Torino, Italy
	BB-10901 (huN901-DM1, huN901-N2'-Deacetyl-N2-(3-Mercapto-1-oxopropyl)-Maytasine)	ImmunoGen , Inc.	Targets and kills cancer cells that express the CD 56 antigen. A humanized monoclonal antibody coupled with a cancer-killing agent.
	Campath-1H (alemtuzumab, monoclonal antibody CD52)	National Cancer Institute and Fred Hutchinson Cancer Research Institute	Used before mismatched allo transplant to prevent GVHD.
	CC 3304, noscapine	Cougar Biotech	Dose escalation and safety study for patients with relapsed/refractory multiple myeloma
	dendritic cell vaccine	Rockefeller University Hospital	Autologous dendritic cells pulsed with alpha-galactosyl ceramide for patients with persistent or relapsed MM after initial therapy.
	ENMD 0995 (analog S-3APG)	EntreMed	Thalidomide analog.
	enzastaurin (LY317615.HCl)	Eli Lilly	Safety study in combination with bortezomib in rel/ref mm.
	fenretinide (4-HPR)	California Cancer Consortium; NCI	Intravenous chemotherapy agent in a safety and tolerability study for patients with relapsed or refractory hematologic cancer
	Flavopiridol (HMR 1275, L86-8275)	NCI; Aventis Oncology	Study of bortezomib and flavopiridol in patients with recurrent/refractory B-cell neoplasms to determine maximum tolerated dose, safety, and efficacy.
	fluphenazine	Immune Control Inc.	Serotonin antagonist for relapsed/refractory mm.
	GSK690693	GlaxoSmithkline	Maximum tolerated dose and efficacy study in hematologic malignancies.
	HCD122 (CHIR-12.12)	Novartis andXoma Ltd.	Monoclonal antibody to CD40
	Hulu63	PDL Biopharma, Inc & Dana-Farber	Novel humanized monoclonal antibody to CS1, a myeloma antigen expressed in more than 96% of mm patients.
	IP1-504	Infinity Pharmaceuticals	Safety and efficacy trial of Heat Shock Protein 90 inhibitor on patients with relapsed/refractory mm.
	KOS-953 (tanespimycin); 17-allylamino-17-demethoxy-geldanamycin)	Kosan Biosciences	Inhibitor of heat shock protein 90 being evaluated both as monotherapy and in combination with VELCADE® for patients with relapsed, refractory multiple myeloma.
	LymphoRad® 131 (Radio-labeled BlyS Protein)	Human Genome Sciences	Iodine-labeled B lymphocyte stimulator.
	Measles Virus (Oncolytic Measles Virus)	Mayo Clinic	Engineering the virus to make it more user-friendly as an agent for cancer therapy
	MRA (humanized anti-human IL-6 receptor mAb)	Chugai Pharma USA	Safety and efficacy study of monoclonal antibody to IL-6 in patients with myeloma.
	MS-275	Berlex Labs	For poor-risk hematologic malignancy.
	Myelovax	Apaloxo Biotechnologie GmbH	For treatment of multiple myeloma.
	NPI-0052 (salinos-poramide)	Nereus Pharmaceuticals	A single-agent, dose escalation study for patients with relapsed or relapsed/refractory multiple myeloma. Sites: Dana- Farber Cancer Institute,Ohio State University, Roswell Park Cancer Institute and University of Chicago.
	Palifermin	Amgen, Inc.	Supportive care to help prevent mucositis after HDT.
	Product R	Advanced Viral Research Corp.	For treatment of cachexia in patients with hematopoietic cancers, including MM.
	Pyroxamide	National Cancer Institute	Histone deacetylase (HDAC) inhibitor for advanced malignancies.
	REVLIMID® (CC-5013, lenalidomide)	Celgene Corporation	Combined with Doxil, vincristine, and dexamethasone (Dvd) in relapsed/refractory MM.
	REVLIMID® (CC-5013, lenalidomide)	Celgene Corporation	Single-center study of Revlimid in combination with Velcade for relapsed/refractory MM.
RHAMM-R3 peptide (ILSLELMKL)	University of Ulm, Germany, et al.	Vaccine study with a CD8+ T cell epitope peptide derived from RHAMM for patients with AML, MDS, and MM.	
RTA 402 (CDDO-Me)	Reata Pharmaceuticals, Inc.	Oral NF-kappa B inhibitor being tested for safety and efficacy in patients with solid tumors, lymphoma, and myeloma.	
SAHA (suberoylanilide hydroxamic acid, SW 064652)	Merck	Histone deacetylase (HDAC) inhibitor for advanced myeloma	
SGN-35	Seattle Genetics	Safety profile and pharmacokinetic parameters of SGN-35 in patients with rel/ref CD30-positive hematologic malignancies.	
SGN-40 (Phase IB)	Seattle Genetics	Open-label, single-arm study of SGN-40 in escalating doses in combination with Revlimid and dexamethasone for patients with rel/ref mm.	
SNS-032	Sunesis	Dose-excalation study to examine the safety and tolerability, as well as preliminary anti-tumor activity, of a novel targeted inhibitor of CDks 2, 7 and 9, in patients with B-cell malignancies.	
temsirolimus (CCI-779, Torisel™)	Wyeth	m-TOR inhibitor in combination with lenalidomide (Revlimid) for rel/ref MM.	
Th2 Cells	National Cancer Institute	For prevention of GVHD following mini allogeneic transplant.	
THALOMID®* (thalidomide)	Arkansas Cancer Research Center	Used in combination with VELCADE® for refractory multiple myeloma.	
Thymoglobulin	SangStat Medical Corp.	Drug approved for treatment of kidney transplant rejection now in study for patients with rel/ref MM. For more information about this trial, please contact Nick Fisher, Manager of Oncology Clinical Research at Wash U, at 314-454-5102.	
(rabbit-derived polyclonal anti-thymocyte globulin)			
TKI-258	Novartis	A novel, multitargeted tyrosine kinase inhibitor for the treatment of relapsed/refractory multiple myeloma.	
TPA (12-O-tetradecanoylphorbol-13-acetate)	Cancer Institute of New Jersey and NCI	Chemotherapy agent for treatment of relapsed/refractory hematologic malignancies.	
Triapine®	Vion	DNA synthesis inhibitor combined with cytarabine in hematologic malignancies.	
(3-Aminopyridine-2-carboxaldehyde Thiosemi-carbazone)			
Trisenox™ (arsenic trioxide injection)	Cephalon Oncology	Apoptosis inducer for relapse.	
VELCADE® (bortezomib, PS-341, LDP-341, MLN-341)	Millennium Pharmaceuticals, Inc.	Trials combining VELCADE® with other agents in relapse setting..	
VNP40101M	Vion	Novel alkylating agent in combination with cytarabine for patients with hematologic malignancies.	
VQD-001, SSG, stibogluconate	VioQuest Pharmaceuticals, Inc.	Targets protein tyrosine phosphatases. Trial is open at the Cleveland Clinic Cancer Center to examine the effectiveness, safety, and tolerability of SSG for the treatment of solid tumors, lymphoma, and myeloma.	
Zarnestra (tipifarnib, FTI R115777, R115777)	Johnson & Johnson	Multi-center trial to determine optimal dosing of VELCADE® (bortezomib) in combination with Zarnestra (tipifarnib) for the treatment of relapsed/refractory mm.	
Zolinza (vorinostat, SAHA)	Merck	HDAC inhibitor that has already been approved for cutaneous T-Cell lymphoma and is now being studied in myeloma in combination with bortezomib (VELCADE®).	

Phase I – Assess side effects of the treatment and determine a maximum tolerated dose.
Phase II – Assess anti-myeloma effects of treatment at the dose established in Phase I trial.
Phase III – Compare a newer treatment against current standard treatment.
FDA – FDA approved, but further testing desired post-approval

* Approved for prescription by the US Food and Drug Administration prior to January 2001, but are not specifically indicated for the treatment of multiple myeloma.

To view a complete listing of drugs in Clinical Trials for myeloma, please visit the IMF website at www.myeloma.org.

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