

## Partnering opportunities abound in oncology, CNS and infectious diseases

As big pharma continues to ramp up its search for external sources of pipeline assets – AstraZeneca has set an ‘externalisation’ target of 40% for its R&D portfolio – the fields of oncology, CNS and infectious disease appear to hold the most opportunity, according to new partnering data\* from *EvaluatePharma*.

These three therapeutic areas alone account for more than half of the 600 partnering opportunities identified from 2,500 private and public companies. Meanwhile, of the 279 clinical stage assets looking for a home, half are undergoing phase II trials to generate that all-important proof-of-concept data (see tables below).

### Oncology to the fore

Unsurprisingly, new therapies for cancer dominate the opportunities list. Despite a gradual decline in deal volumes and value in recent years, cancer products still attract the most partnering interest compared to other therapeutic areas ([Resurgence of conventional and untrendy therapy area product deals in 2009](#), February 25, 2010).

Therapeutic category	Opportunity Count	Forecast branded drug sales in 2016 (\$bn)
Oncology & Immunomodulators	193	113.7
Central Nervous System	104	83.8
Systemic Anti-infectives	71	94.1
Cardiovascular	40	65.7
Gastro-Intestinal	39	27.8
Genito-Urinary	36	25.7
Musculoskeletal	31	56.4
Endocrine	26	52.6
Respiratory	21	45.7
Dermatology	20	12.7
Blood	14	52.1
Sensory Organs	8	17.8
Various	9	17.1
Unclassified Rx + OTC sales		177.7
<b>Total</b>	<b>612</b>	<b>842.9</b>

Perhaps more surprising is the relative scarcity of blood products – so far just 14 pipeline assets have been flagged up as requiring a partner for further development or commercialisation, despite the field being one of the biggest therapeutic areas with strong sales growth expected over the next six years.

### Phase II heavy

The table below highlights the preponderance of phase II assets available for partnering. Although recent trends in licensing have suggested that more deals and money are being committed to earlier stage assets, the data below indicates the traditional partnering trigger point of phase II data remains the target.

<b>Status</b>	<b>Opportunity Count</b>
<b>Marketed</b>	
Marketed	72
Approved	6
Total (Marketed)	78
<b>R&amp;D</b>	
Filed	4
Phase III	34
Phase II	147
Phase I	94
Pre-clinical	165
Research project	57
Total (R&D)	501
Suspended in R&D	33
<b>Total Opportunities</b>	<b>612</b>

As to what kind of fees these assets might attract, our analysis of deals conducted in the first half of 2010 suggest the going upfront rate for phase III, II and I products is \$35m, \$27m and \$15m, respectively ([First half 2010 sees a return to more conventional deal values, July 28, 2010](#)).

In addition, at each of the clinical phases, cancer, CNS and infectious disease products are by far the most prevalent.

### **Small molecules still reign**

Despite the recent clamour for biotech products and technology platforms, it is interesting that small molecule drugs continue to dominate the partnering scene, accounting for almost two-thirds of the 600 assets identified.

This ratio reflects the proportion of small molecules in development throughout the industry, while the majority of the most valuable deals struck so far this year were for small molecule drugs.

<b>Technology</b>	<b>Opportunity Count</b>
<b>Biotechnology</b>	
Recombinant product	77
Bioengineered vaccine	39
Monoclonal antibody	28
Other biotechnology product	19
Gene therapy	13
Antisense therapies	12
Cell therapy	4
Monoclonal antibody (conjugated)	2
Transgenic product	0
<i>Sub total</i>	<i>194</i>
<b>Conventional</b>	
Small molecule chemistry	385
Plant extract	13
Protein extract	9
Chiral chemistry	7
In vivo diagnostics	2
Vaccine	2
Miscellaneous	0
<i>Sub total</i>	<i>418</i>
<b>Total</b>	<b>612</b>

As for the some of the highest profile unpartnered assets, the table below highlights a few in late stage clinical development.

A number of the assets face critical developmental hurdles, the clearance of which will likely accelerate licensing talks.

For example, MAP Pharmaceuticals' migraine candidate, Levadex, has been touted for some time as a product with the potential to secure a lucrative licensing deal. So far the company has reported encouraging efficacy data with the orally inhaled drug, although certain safety hurdles remain, including results from a QT trial and a study in asthmatic patients.

A clean bill of health from these trials and the successful filing to the FDA early next year should help bring any partnering discussions to a conclusion.

As for Optimer Pharmaceuticals, the lack of a partner at this late stage for its anti-bacterial agent, fidaxomicin, has disappointed investors. However, should the product gain approval in Europe and the US by the middle of next year Optimer should be in a position to reward its long-term shareholders ([Optimer and investors playing the waiting game](#), February 15, 2010).

### Selected Late Stage Partnering Opportunities

Status	Product	Generic Name	Company	Pharmacological Class	Therapeutic category
<b>Filed</b>	Difimicin (OPT-80)	fidaxomicin	Optimer Pharmaceuticals	Bacterial RNA polymerase inhibitor	Anti-bacterials
<b>Phase III</b>	Gattex	teduglutide	NPS Pharmaceuticals	Glucagon-like peptide 2 (GLP-2) agonist	Anti-spasmodics & anti-cholinergics
	Levadex	dihydroergotamine mesylate	MAP Pharmaceuticals	5-HT1B (serotonin) & 5-HT1D (serotonin) agonist	Anti-migraine preparations
	Telcyta (TLK286)	canfosfamide	Telik	Alkylating agent	Alkylating agents
	AS1413	amonafide malate	Antisoma	Topoisomerase II inhibitor	Alkaloids
	Aplidin	plitidepsin	Zeltia	Cell cycle inhibitor & VEGF inhibitor	Other cytostatics
	Glufosfamide	glufosfamide	Threshold Pharmaceuticals	Alkylating agent	Alkylating agents
	Belinostat (PXD101)	belinostat	TopoTarget	Histone deacetylase (HDAC) inhibitor	Other cytostatics
	Diamyd	glutamate decarboxylase	Diamyd Medical	Glutamate modulator	Anti-diabetics
	Orplatna	satraplatin	Agennix	Platinum compound	Platinum compounds
	Talactoferrin	talactoferrin alfa	Agennix	Immunomodulator	Immunosuppressants
	Tecarfarin	tecarfarin	ARYx Therapeutics	Vitamin K antagonist	Anti-coagulants
	Arenegy (NGR-hTNF)	-	MolMed	CD13 aminopeptidase N (APN) inhibitor	Anti-angiogenics
	EPA Project	-	S.L.A. Pharma	Anti-FAP agent	Other cytostatics
	GS-101	aganirsen	Gene Signal	IRS-1 antisense	Immunosuppressants

\* The new partnering service from *EvaluatePharma* has so far scoured the bulk of companies in its coverage and identified specific products whose owners have indicated that a partner is required for further development or commercialisation.

The service is also asking companies to submit their own partnering opportunities into the database.