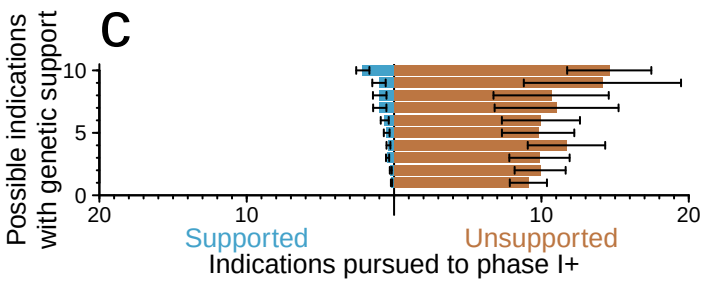
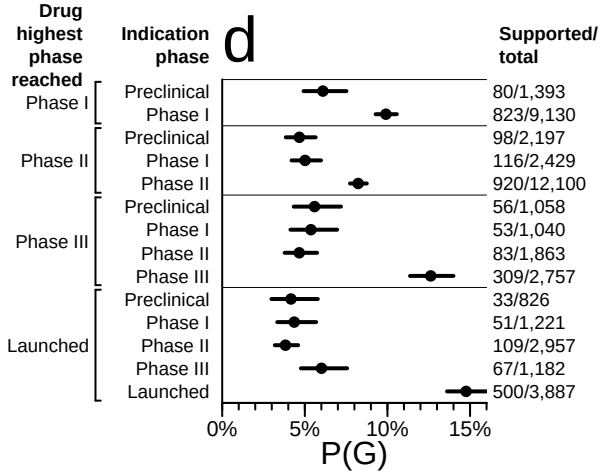
a

	all genes	predicted Ab tractable	predicted SM tractable	rhodopsin−like GPCRs	nuclear receptors	enzymes	ion channels	kinases
all areas	719/34,190 **2.1%**	588/17,811 **3.3%**	614/12,391 **5%**	46/508 **9.1%**	22/245 **9%**	116/2,278 **5.1%**	33/714 **4.6%**	135/1,134 **12%**
hematology	42/4,794 **0.88%**	35/2,409 **1.5%**	37/1,698 **2.2%**	2/87 **2.3%**	0/30 **0%**	8/276 **2.9%**	0/58 **0%**	4/156 **2.6%**
metabolic	116/6,819 **1.7%**	94/3,594 **2.6%**	95/2,487 **3.8%**	8/90 **8.9%**	10/51 **20%**	14/471 **3%**	2/98 **2%**	3/185 **1.6%**
respiratory	24/884 **2.7%**	23/480 **4.8%**	12/318 **3.8%**	2/9 **22%**	0/5 **0%**	2/51 **3.9%**	1/26 **3.8%**	0/13 **0%**
endocrine	35/2,676 **1.3%**	31/1,327 **2.3%**	31/922 **3.4%**	7/53 **13%**	2/32 **6.2%**	1/187 **0.53%**	2/53 **3.8%**	3/80 **3.8%**
infection	3/234 **1.3%**	3/138 **2.2%**	1/88 **1.1%**	0/4 **0%**	0/2 **0%**	0/13 **0%**	0/7 **0%**	0/2 **0%**
congenital	87/4,488 **1.9%**	65/2,444 **2.7%**	63/1,697 **3.7%**	2/46 **4.3%**	2/28 **7.1%**	15/296 **5.1%**	1/103 **0.97%**	2/114 **1.8%**
neurology	81/3,481 **2.3%**	70/1,911 **3.7%**	65/1,212 **5.4%**	8/53 **15%**	0/13 **0%**	10/198 **5.1%**	14/133 **11%**	3/86 **3.5%**
cardiovascular	39/2,681 **1.5%**	37/1,436 **2.6%**	36/952 **3.8%**	3/43 **7%**	1/17 **5.9%**	10/212 **4.7%**	10/97 **10%**	1/90 **1.1%**
oncology	295/4,304 **6.9%**	227/2,088 **11%**	277/1,975 **14%**	6/37 **16%**	4/25 **16%**	62/419 **15%**	0/56 **0%**	109/250 **44%**
digestive	38/2,309 **1.6%**	30/1,252 **2.4%**	26/802 **3.2%**	3/47 **6.4%**	3/21 **14%**	6/129 **4.7%**	1/24 **4.2%**	4/71 **5.6%**
psychiatry	40/2,382 **1.7%**	38/1,300 **2.9%**	39/786 **5%**	14/53 **26%**	0/18 **0%**	4/131 **3.1%**	6/84 **7.1%**	0/74 **0%**
immune	66/2,406 **2.7%**	59/1,301 **4.5%**	37/855 **4.3%**	4/40 **10%**	0/7 **0%**	10/125 **8%**	0/26 **0%**	5/79 **6.3%**
signs/symptoms	47/3,629 **1.3%**	41/1,897 **2.2%**	41/1,200 **3.4%**	7/70 **10%**	4/30 **13%**	4/206 **1.9%**	12/124 **9.7%**	3/107 **2.8%**
dermatology	49/2,217 **2.2%**	43/1,183 **3.6%**	32/731 **4.4%**	2/24 **8.3%**	0/6 **0%**	7/131 **5.3%**	0/28 **0%**	6/71 **8.5%**
ophthalmology	23/2,044 **1.1%**	18/1,153 **1.6%**	15/626 **2.4%**	1/19 **5.3%**	1/18 **5.6%**	3/108 **2.8%**	2/54 **3.7%**	0/61 **0%**
musculoskeletal	30/1,620 **1.9%**	27/887 **3%**	22/539 **4.1%**	1/15 **6.7%**	2/6 **33%**	2/91 **2.2%**	1/31 **3.2%**	4/54 **7.4%**
other	7/1,513 **0.46%**	6/761 **0.79%**	5/487 **1%**	0/24 **0%**	1/11 **9.1%**	0/93 **0%**	0/35 **0%**	1/41 **2.4%**

b

	all genes	predicted Ab tractable	predicted SM tractable	rhodopsin−like GPCRs	nuclear receptors	enzymes	ion channels	kinases
oncogene	49/184 **27%**	39/94 **41%**	46/118 **39%**	1/3 **33%**	1/2 **50%**	10/18 **56%**	0/1 **0%**	19/25 **76%**
tumor suppressor	18/197 **9.1%**	8/69 **12%**	15/103 **15%**	0/1 **0%**	0/1 **0%**	6/25 **24%**	0/0 **–**	3/10 **30%**
unknown	18/208 **8.7%**	14/102 **14%**	16/96 **17%**	1/2 **50%**	0/0 **–**	1/13 **7.7%**	0/1 **0%**	5/18 **28%**

c



d