



DRUG DISCOVERY INITIATIVE TOOLBOX INFORMATION SUBMISSION FORM

A: Your Contact Information

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**May we list your name & institution/company/affiliation in the online
Toolbox listing?**

<input type="checkbox"/> NO – please list anonymously
<input checked="" type="checkbox"/> YES – you may list my name & institution/company/affiliation

B: Tool Type Submitted

Tool Type	
<input type="checkbox"/>	In vitro model
<input checked="" type="checkbox"/>	In vivo model
<input type="checkbox"/>	Candidate therapeutic
<input type="checkbox"/>	Drug delivery technology
<input type="checkbox"/>	Other _____

C: Tool Type: Details

Check as many as apply

Relevant to Disorder	Screening Models	Therapeutic Focus within NF	Signaling pathway/target
<input checked="" type="checkbox"/> NF1	In vitro models:	<input type="checkbox"/> Plexiform neurofibroma	<input type="checkbox"/> Growth factor receptor modulator
<input type="checkbox"/> NF2	<input type="checkbox"/> Cell line (human)	<input type="checkbox"/> Neurocutaneous fibroma	<input type="checkbox"/> Ras-dependent
<input type="checkbox"/> Schwannomatosis	<input type="checkbox"/> Cell line (animal)	<input type="checkbox"/> Schwannomma	<input type="checkbox"/> Ras-independent
<input type="checkbox"/> Other	<input type="checkbox"/> Primary cells (human)	<input type="checkbox"/> Meningioma	<input type="checkbox"/> PI3K
	<input type="checkbox"/> Primary cells (animal)	<input checked="" type="checkbox"/> Optic Glioma	<input type="checkbox"/> Raf/MEK/ERK
	<input checked="" type="checkbox"/> Mouse models:	<input type="checkbox"/> Astrocytoma	<input type="checkbox"/> Rac 1/2/Rho
	<input type="checkbox"/> Transgenic	<input type="checkbox"/> MPNST	<input type="checkbox"/> PAK1
	<input type="checkbox"/> Human xenograft	<input type="checkbox"/> PNS Tumors - other	<input type="checkbox"/> mTOR
	<input checked="" type="checkbox"/> Other Conditional KO	<input type="checkbox"/> CNS Tumors - other	<input type="checkbox"/> PKCalpha
	<input type="checkbox"/> Animal models – other:	<input type="checkbox"/> Dysplasia/Bone Defects	<input type="checkbox"/> Other _____
	<input type="checkbox"/> Zebrafish	<input type="checkbox"/> Cardiovascular Defects	
	<input type="checkbox"/> Drosophila	<input type="checkbox"/> Cognition/learning	
	<input type="checkbox"/> Other _____	<input type="checkbox"/> Pain	
		<input type="checkbox"/> Blood disorders	
	Candidate therapeutics:	<input type="checkbox"/> Other _____	
	<input type="checkbox"/> Antibody		
	<input type="checkbox"/> Peptide		
	<input type="checkbox"/> Small molecule/chemical entity/array		
	<input type="checkbox"/> Gene therapy		
	<input type="checkbox"/> RNA silencing		
	<input type="checkbox"/> Other _____		

D: Description of tool:

Please provide **BRIEF** but sufficient information on the tool in order to fully present its utility. Information presented should include but is not limited to the following:

In vivo NF models:

- Optic glioma model
- mTOR, RAS, cAMP, PI3K, Raf/MEK
- MRI has been used successfully by our laboratory for visualization of these tumors in vivo

Nf1^{flox/mut}; GFAP-Cre:IRES-LacZ mouse strain (*Nf1*^{+/-} mouse with astrocyte loss of neurofibromin expression). Mice are bred on C57Bl/6 background. The mice are phenotypically normal at birth, but develop prechiasmatic optic nerve and chiasmatic low-grade gliomas by 2-3 months of age. The full description of the model has been published and used to dissect the signaling pathways that control glioma growth in vitro and in vivo.

Related Publications:

Bajenaru ML, Hernandez MR, Perry A, Zhu Y, Parada LF, Garbow JR, **Gutmann DH**: Optic nerve glioma in mice requires astrocyte *Nf1* gene inactivation and *Nf1* brain heterozygosity. *Cancer Res.* 63: 8573-8577, 2003.

Dasgupta B, Yi Y, Hegedus B, Weber JD, **Gutmann DH**: Cerebrospinal fluid proteomic analysis reveals dysregulation of methionine aminopeptidase-2 expression in human and mouse neurofibromatosis 1-associated glioma. *Cancer Res.* 65:9843-50, 2005.

Dasgupta B, Yi Y, Chen DY, Weber JD, **Gutmann DH**: Proteomic analysis reveals hyperactivation of the mTOR pathway in NF1-associated human and mouse brain tumors. *Cancer Research* 65:2755-60, 2005.

Bajenaru ML, Garbow JR, Perry A, Hernandez MR, **Gutmann DH**: Natural history of neurofibromatosis 1-associated optic nerve glioma formation in mice. *Annals of Neurology* 57:119-27, 2005.

Dasgupta B, Li W, Perry A, **Gutmann DH**: Glioma formation in neurofibromatosis 1 reflects preferential activation of K-RAS in astrocytes. *Cancer Research* 65:236-45, 2005.

Patents and Intellectual Property:

Jon Kratochvil (KRATOCHJ@WUSTL.EDU)