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Supplementary Data

A Nuclear Function for the Presenilin 1 Neuronal Partner NPRAP/δ-Catenin

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WESTERN BLOT

Protein expression was validated using western blot analysis. Briefly, cells were centrifuged for 5 min at 1,000 × g and resuspended in 500 µl of STEN buffer (50 mM Tris, pH 7.6, 150 mM NaCl, 2 mM EDTA, 0.2% NP-40 and 0.5% Triton) supplemented with a protease inhibitor cocktail (Complete®, Roche). After 30 min of incubation with agitation at 4°C, lysates were passed several times through a 25-gauge needle and centrifuged at 12,000 rpm for 10 min (4°C). The protein concentration of the supernatant was determined using Bradford reagent (Biorad). Equal amounts of protein were mixed with Laemmli buffer, boiled at 95°C for 5 min, separated using 10% SDS-PAGE and transferred to a polyvinylidene difluoride (PVDF) membrane. Membranes were incubated in 5% non-fat milk in a Tris-buffered solution containing 0.1% Tween (TBS-T) for 1 h and subsequently probed with a mouse anti-Xpress tag antibody (Invitrogen). After a series of washes in TBS-T, the membrane was re-probed with a donkey anti-mouse antibody conjugated to horseradish peroxidase (Santa Cruz) for 1 h. Proteins were visualized using an ECL reagent (Perkin Elmer).

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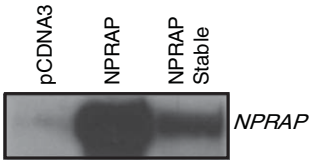
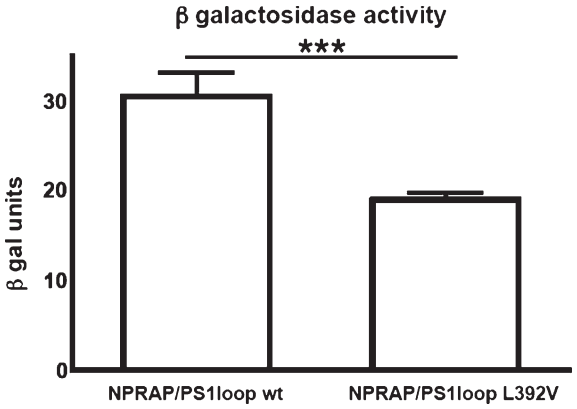


Supplementary Figure S1. Related to Table 1. Western blot analysis of NPRAP expression in samples subjected to microarray hybridization. NPRAP expression in cells transfected either with an empty vector or an NPRAP-encoding vector (lanes 1 and 2) was compared to a cell line stably overexpressing NPRAP (lane 3) as a control for NPRAP expression. Cells from lanes 1 and 2 conditions were further subjected to RNA extraction and microarray hybridization. This protein expression verification was performed in all samples subjected to microarray analysis.



Supplementary Figure S2. Results of the β-Gal activity assay using CPRG as a substrate for relative quantification of interaction strengths between PS1 and NPRAP. The y-axis shows the calculated units of β-Gal activity of AH109 yeast cells expressing prey and bait PS1 and NPRAP proteins (x-axis)S.

Supplementary Table S1
Related to Tables 1 and 2. An example of biological and pathological processes regulated by NPRAP target genes

Process	Gene	Role	Reference
Alzheimer's Disease	*BCHE*	Risk factor	[1]
	MEOX2	Neurovascular dysfunction	[2]
Neurite modulation	*SLITRK5*	Neurite-modulating activity	[3]
	DOK6	Ret-mediated neurite outgrowth	[4]
Cancer	*PCDH10*	Tumor suppressor gene	[5]
	CDH11	Prostate cancer metastasis	[6]
	EDNRB	Nasopharyngeal carcinoma Uveal melanoma	[7, 8]
	RNASEL	Prostate tumorigenesis Pancreatic tumorigenesis	[9, 10]
	BCHE	Colorectal carcinoma	[11]
	PTGER4	Colorectal carcinogenesis	[12]
	IFI16	Prostate tumorigenesis	[13]
	LCP1	Colorectal cancer metastasis	[14]
	FN1	Ovarian tumorigenesis Breast tumorigenesis	[15, 16]
Connective tissue disorder	*COL3A1*	Ehlers-Danlos syndrome type 4	[17]

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