

Supporting Information

Probing Active Cocaine Vaccination Performance through

Catalytic and Noncatalytic Hapten Design

*Xiaoqing Cai,¹ Timothy Whitfield,² Mark S. Hixon,³ Yanabel Grant,² George F. Koob,²
and Kim D. Janda^{*,1}*

¹Department of Chemistry and Immunology, The Skaggs Institute for Chemical Biology, The Worm Institute of Research and Medicine, The Scripps Research Institute, 10550 North Torrey Pines Road, La Jolla, California 92037, United States; ²Committee on the Neurobiology of Addictive Disorders, The Scripps Research Institute, 10550 North Torrey Pines Road, La Jolla, California 92037, United States; ³Department of Discovery Biology, Takeda California, Inc., 10410 Science Center Drive, San Diego, California 92121, United States

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Table S1. Bovine serum albumin (BSA) coupling ratio^a as determined by MALDI-TOF MS^b

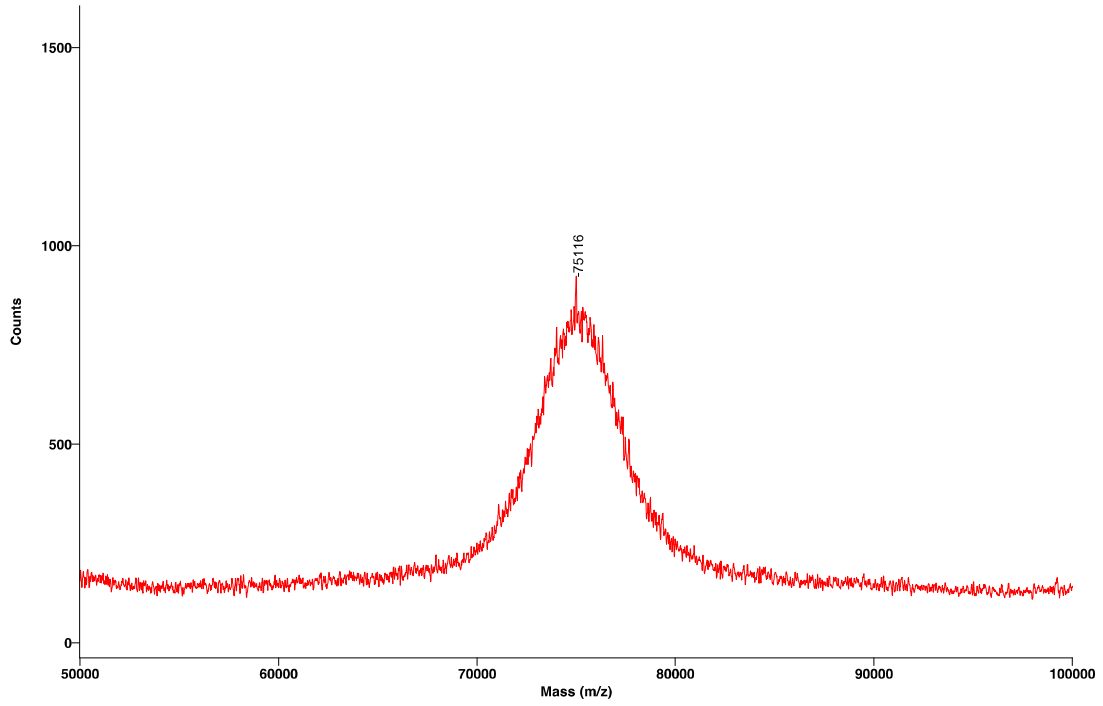
Hapten	GNE	GNT
Coupling Ratio	21	22

^a Coupling ratio: number of moles of hapten per mole of carrier protein

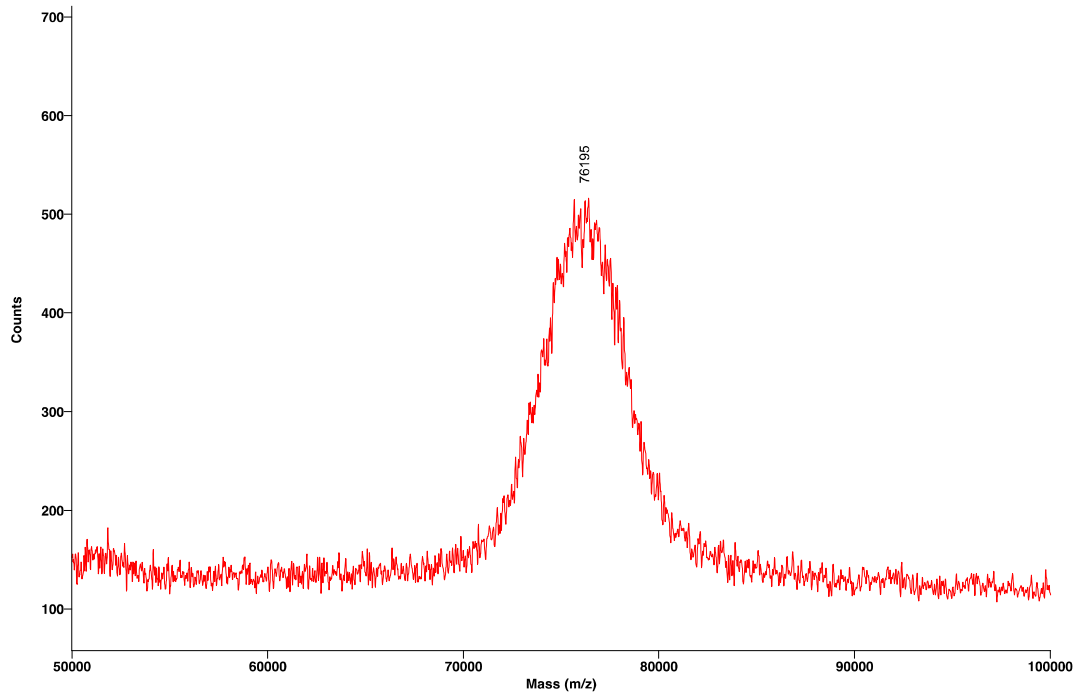
^b Coupling ratio = $(MW_{\text{hapten-BSA}} - MW_{\text{BSA}}) / MW_{\text{hapten}}$; $MW_{\text{BSA}} = 66463 \text{ Da}$

MALDI-TOF MS spectra:

GNE-BSA



GNE-BSA



2. Supplemental data for locomotor testing

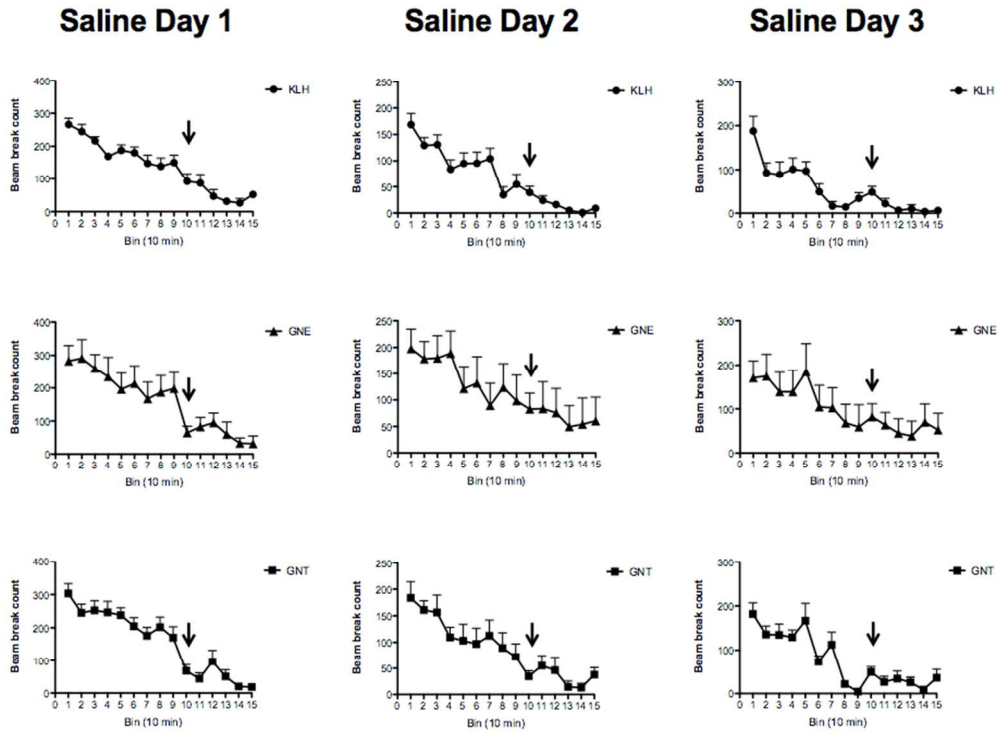


Figure S1. Locomotor hyperactivity (beam breaks) of mice vaccinated with KLH, GNE-KLH and GNT-KLH after i.p. injection of saline.

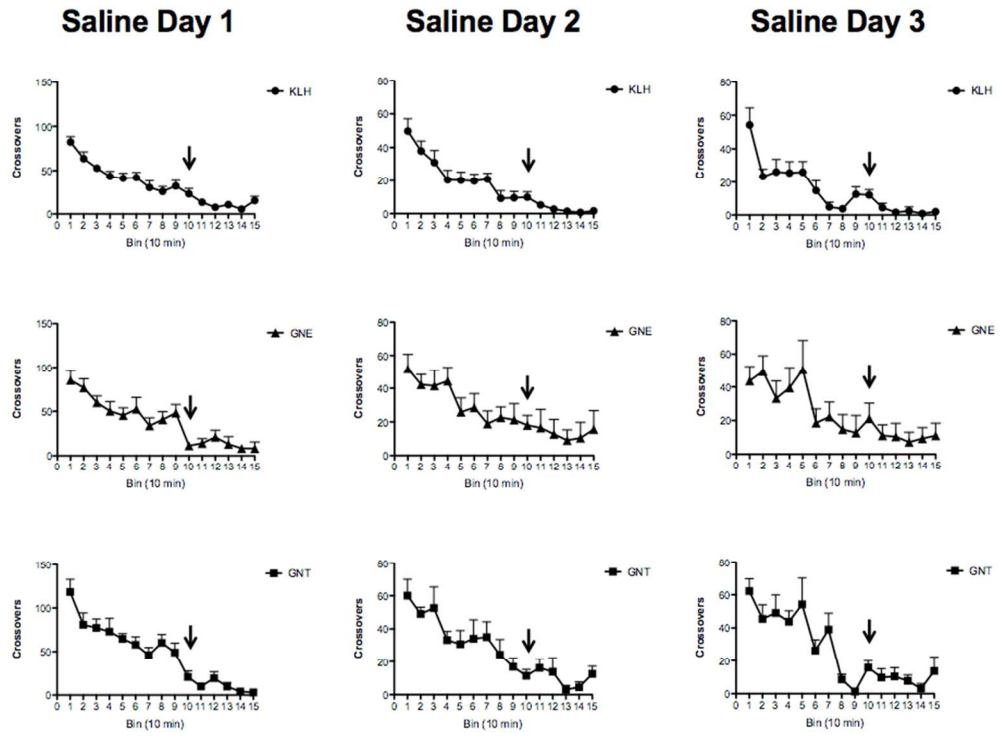


Figure S2. Locomotor hyperactivity (crossovers) of mice vaccinated with KLH, GNE-KLH and GNT-KLH after i.p. injection of saline.

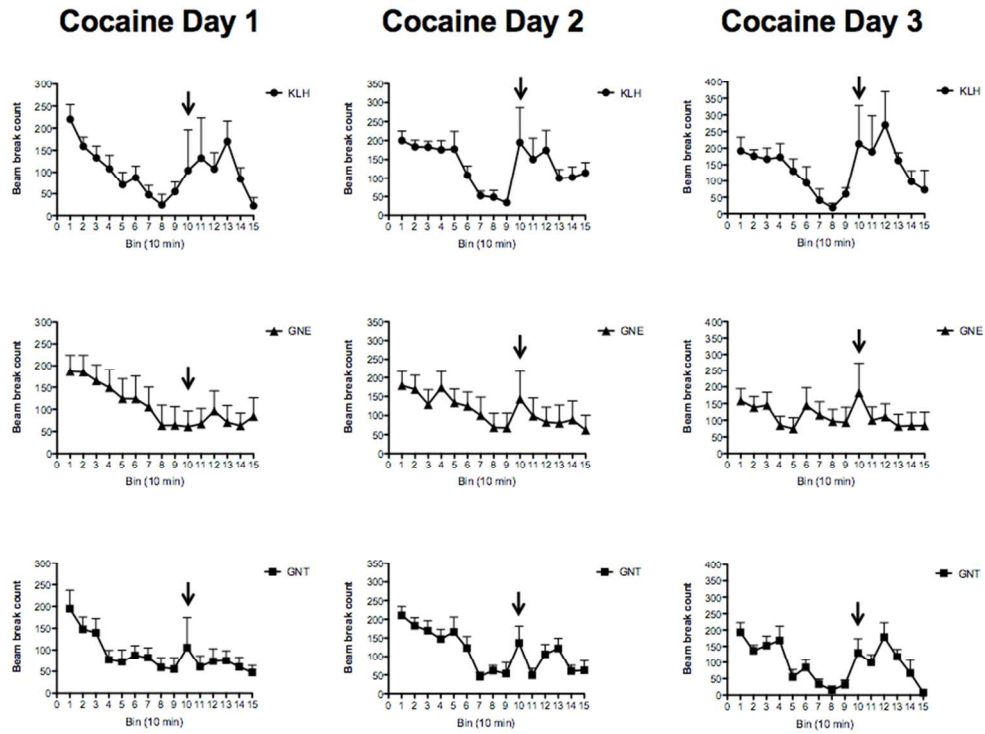


Figure S3. Locomotor hyperactivity (beam breaks) of mice vaccinated with KLH, GNE-KLH and GNT-KLH after i.p. injection of cocaine.

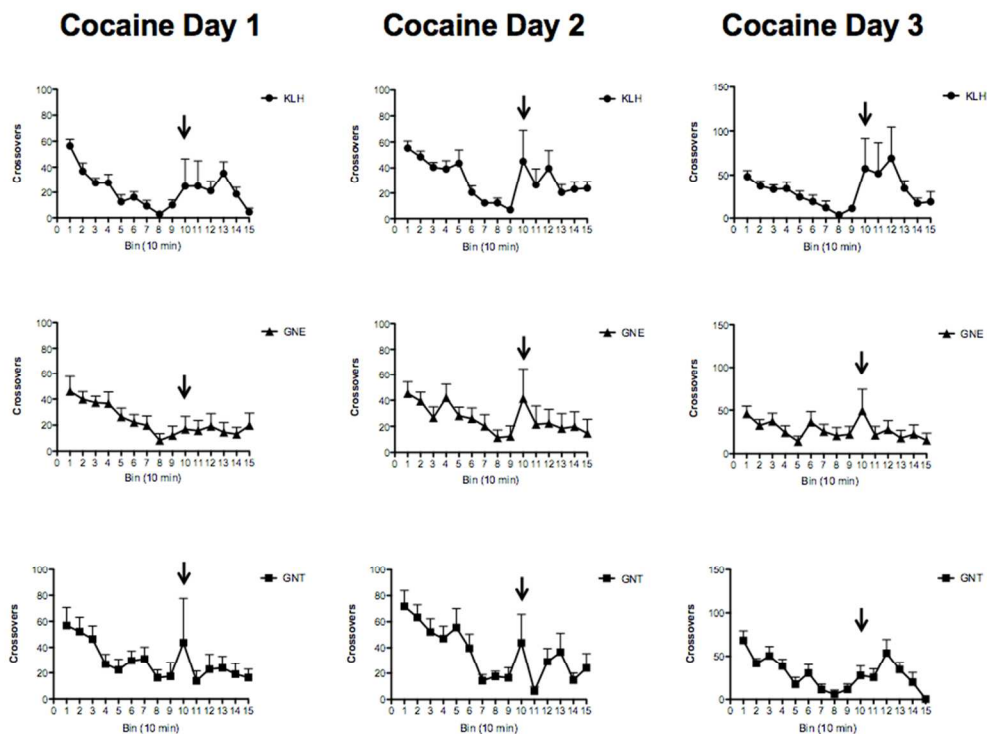


Figure S4. Locomotor hyperactivity (crossovers) of mice vaccinated with KLH, GNE-KLH and GNT-KLH after i.p. injection of cocaine.

2. Michaelis-Menten saturation curves for GNT polyclonal sera

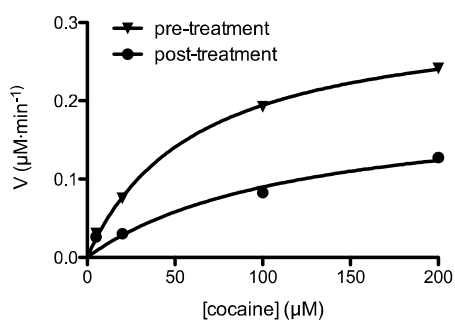
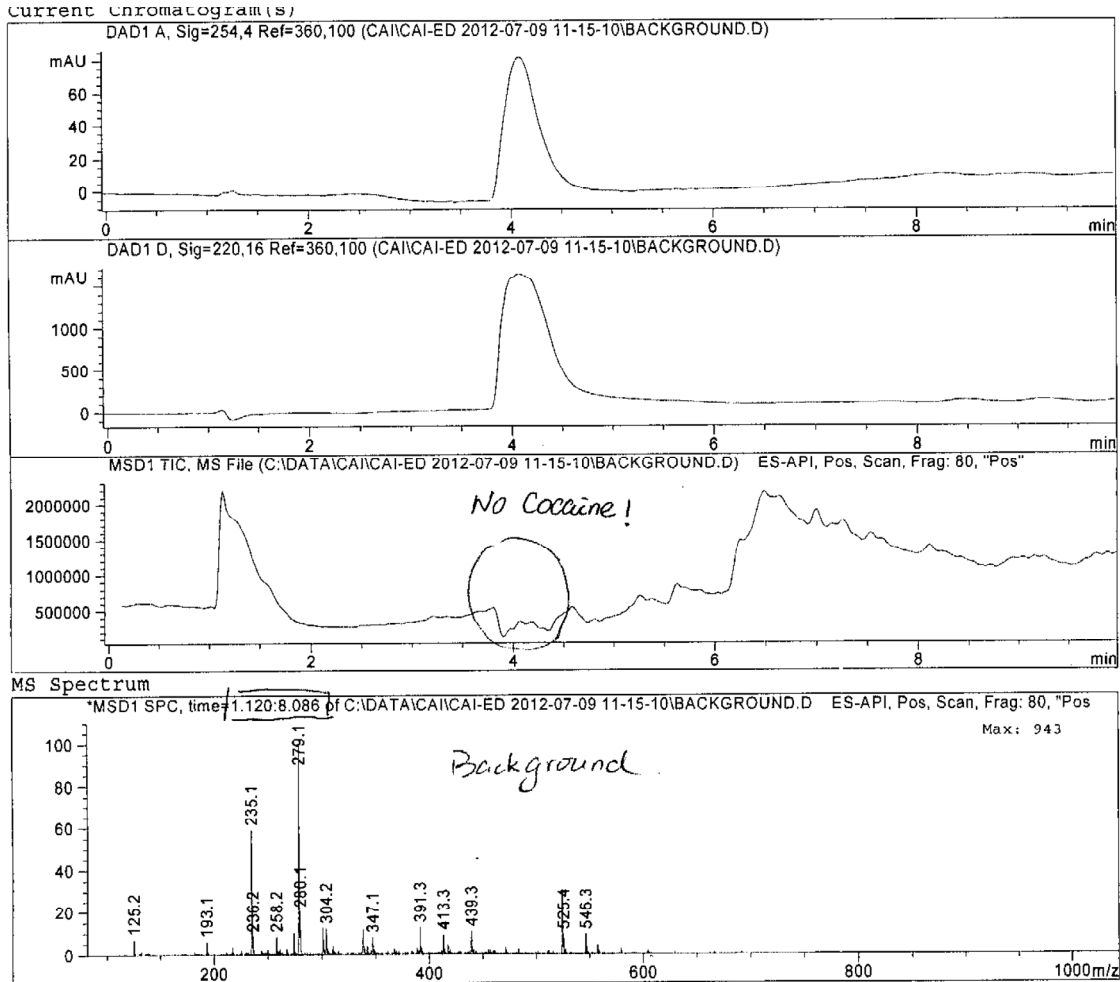


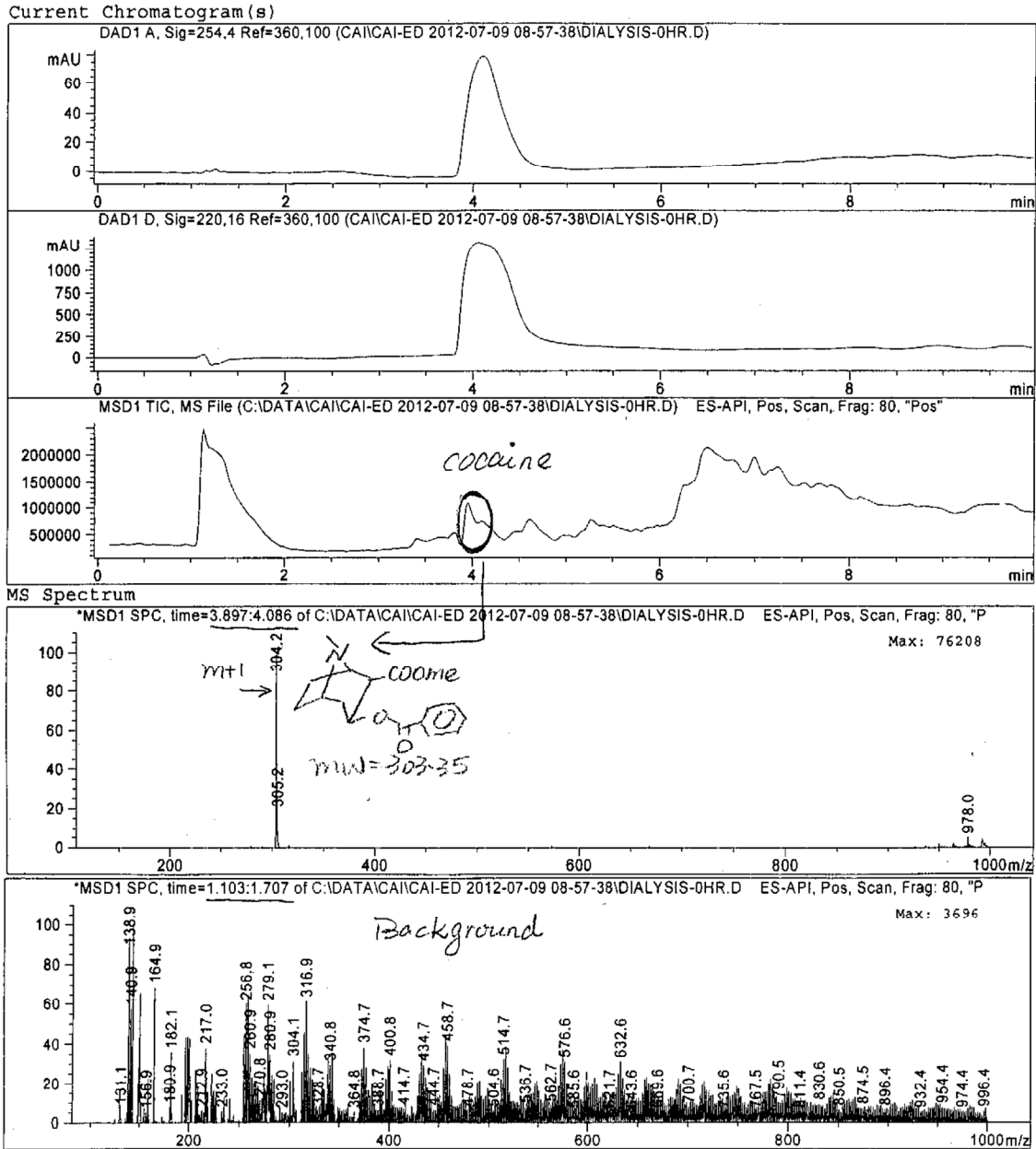
Figure S5. Michaelis-Menten saturation curves for GNT polyclonal sera, the reaction velocity (V) as a function of the substrate concentration ([cocaine]).

3. LC/MS data for the radioimmunoassay

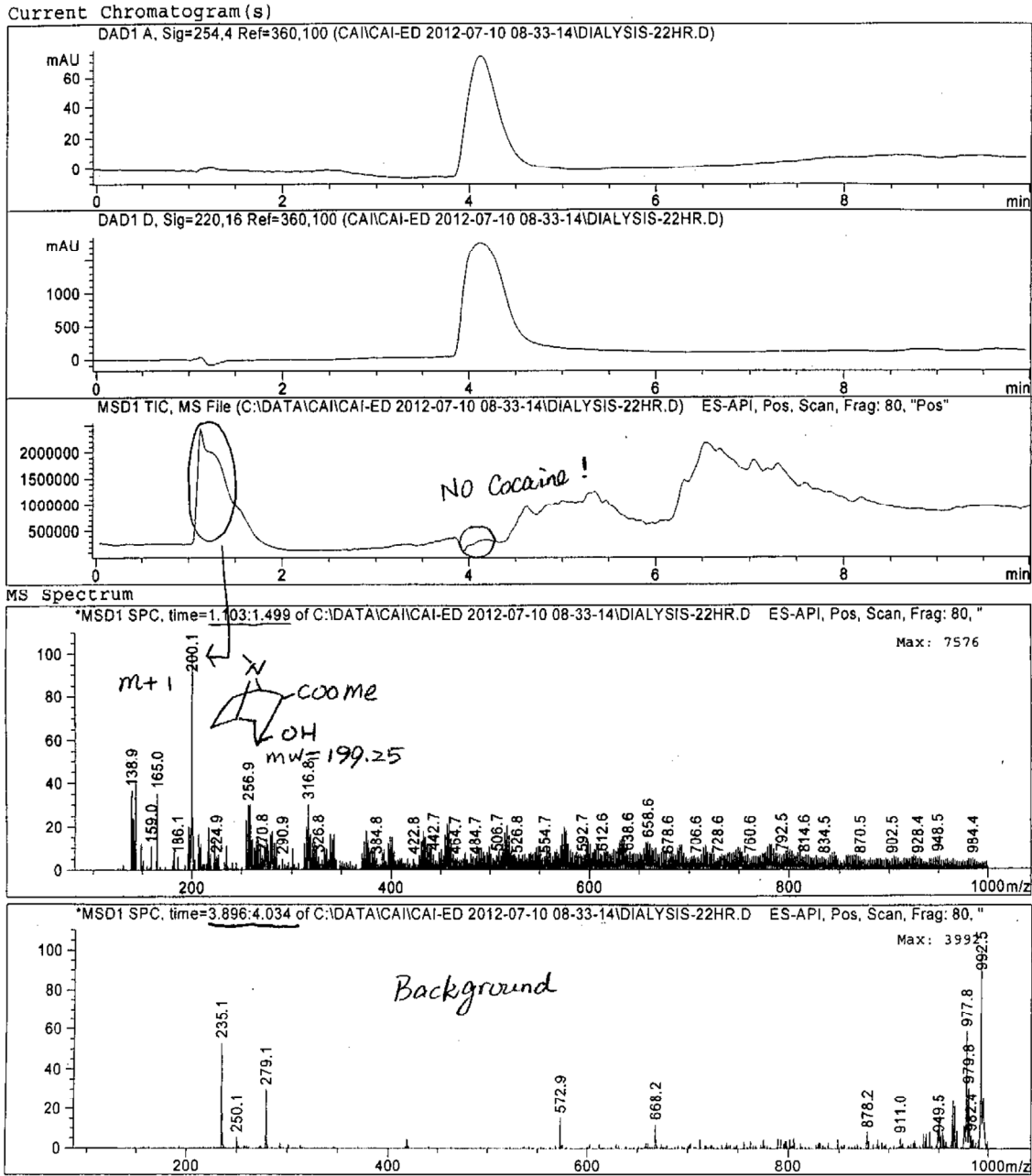
3.1. LC/MS analysis of the BSA solution used in equilibrium dialysis



3.2. LC/MS analysis of the sera solution before equilibrium dialysis



3.3. LC/MS analysis of the sera solution after equilibrium dialysis for 22 hours



4. ^1H and ^{13}C NMR Spectra

