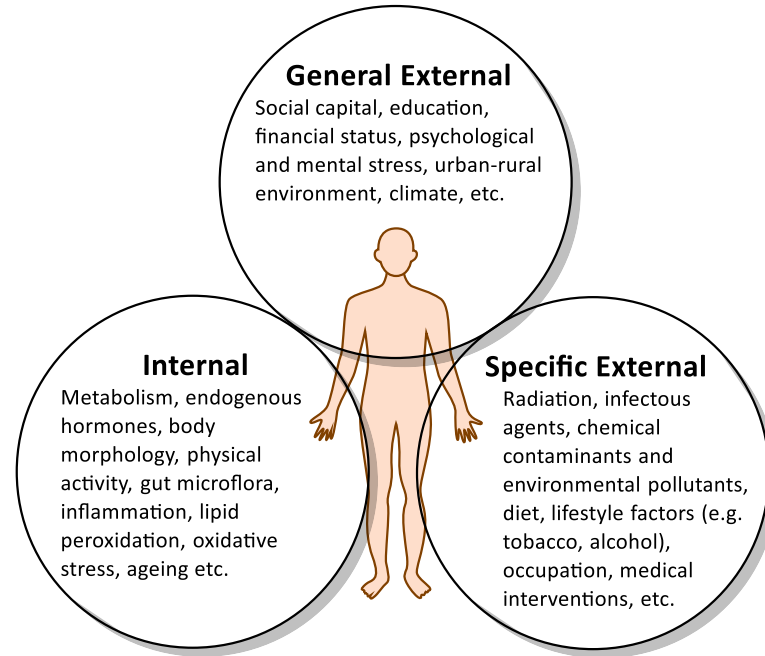


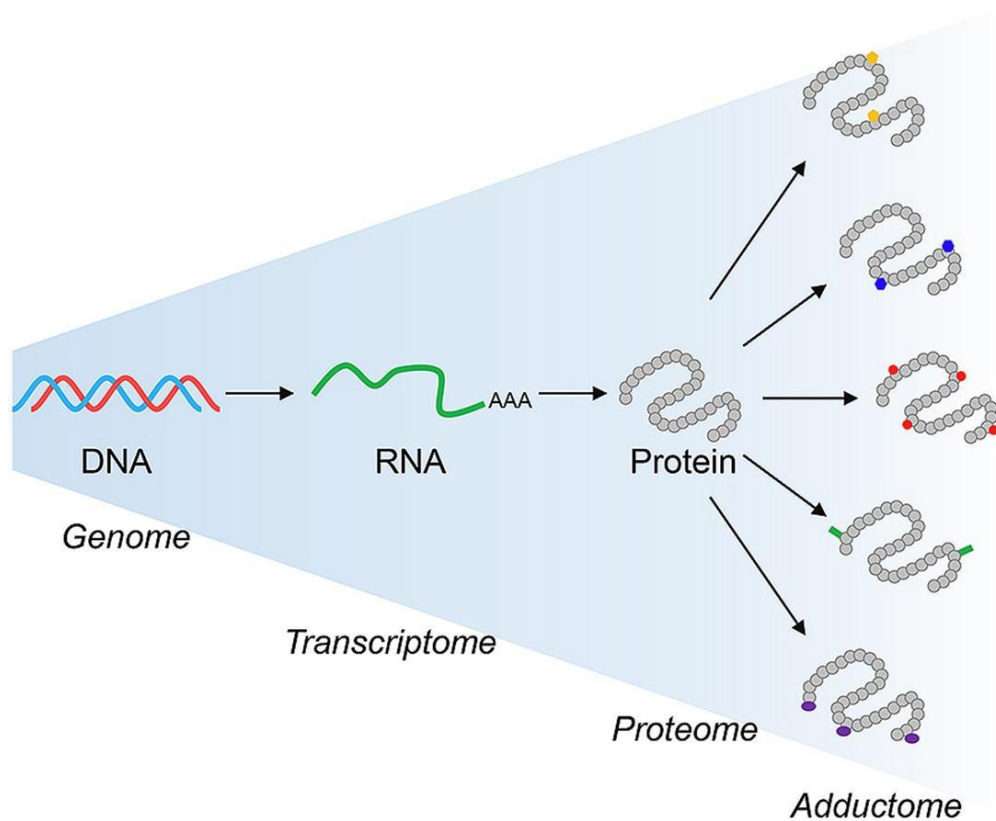
“Bottom-Up against F/RE”: Comparing bottom-up proteomics and a modified Edman degradation methodology for automated, untargeted protein adductomics analysis within the Galaxy platform.

Andrew T. Rajczewski
Galaxy Community Conference
July 18th, 2022

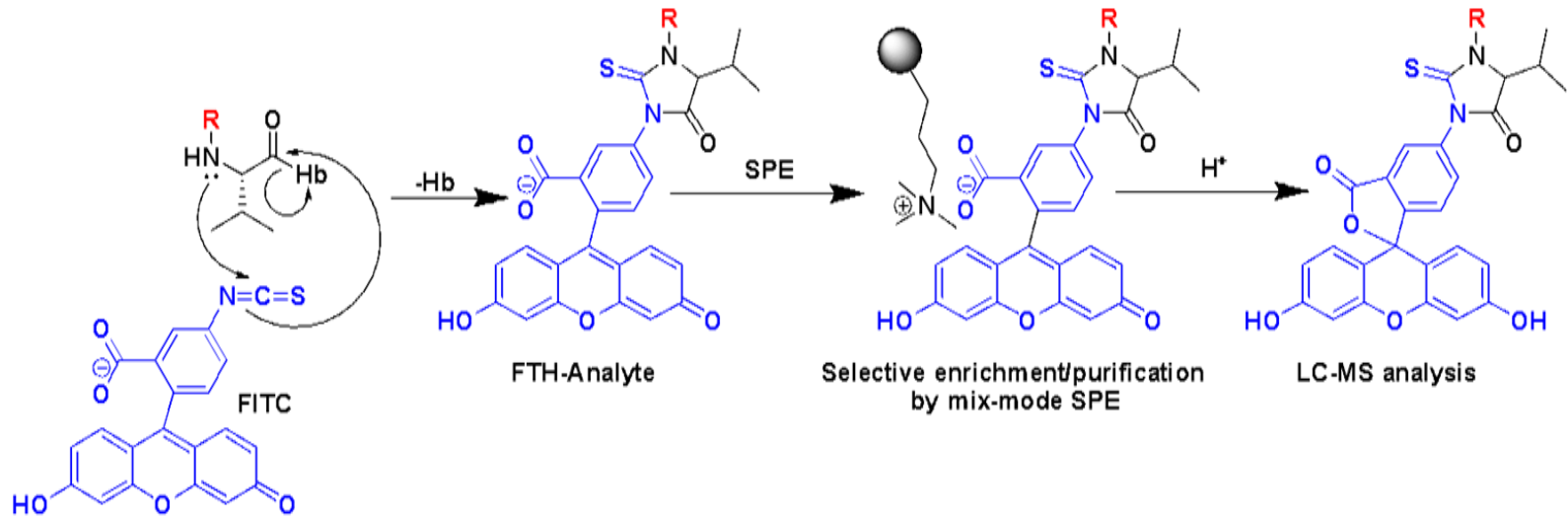
The exposome constitutes the totality of the chemical species to which we are exposed



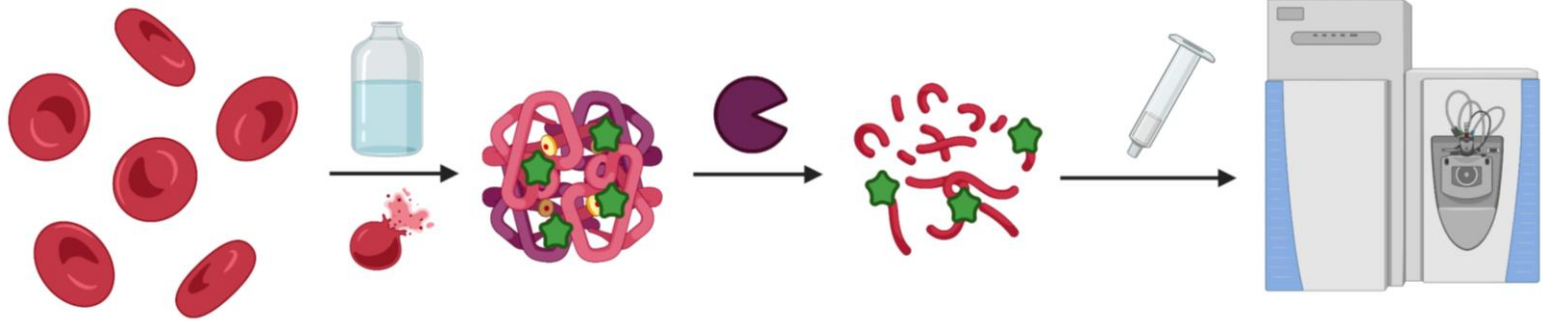
Adductomics as a record of the exposome



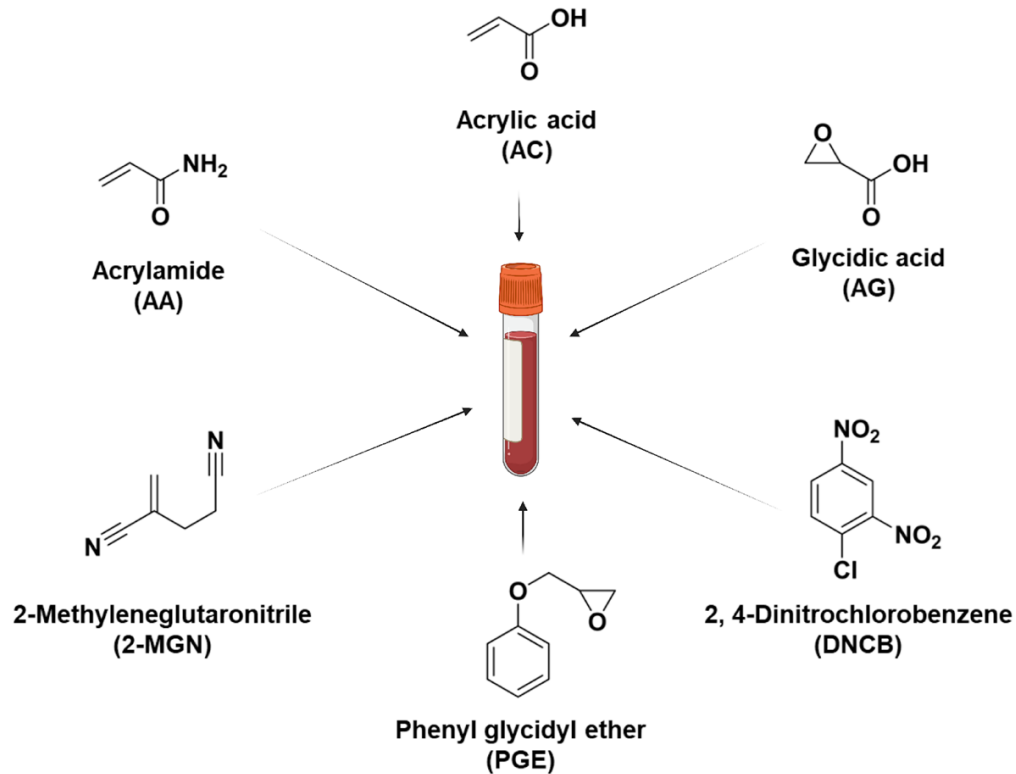
FITC for the measurement of adducts (R) via modified Edman procedure (FIRE)



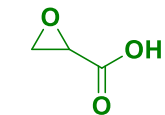
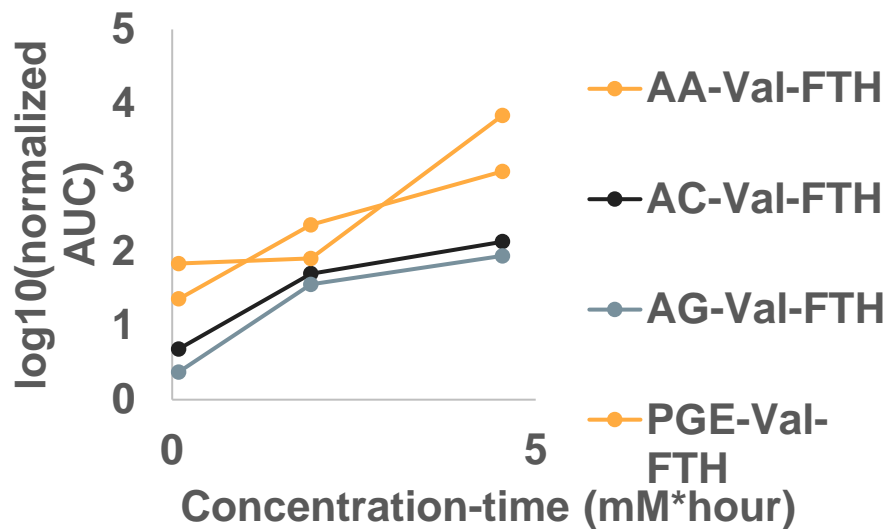
Does bottom-up proteomics represent a viable alternative for untargeted adductomics?



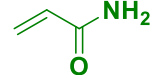
F/RE and proteomics were compared directly with exposed blood



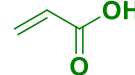
F/RE only detects some of the expected N-terminal adducts



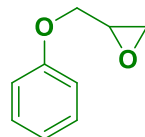
Glycidic Acid



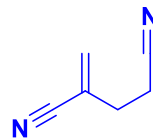
Acrylamide



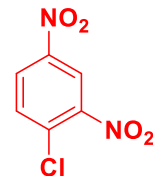
Acrylic Acid



PGE



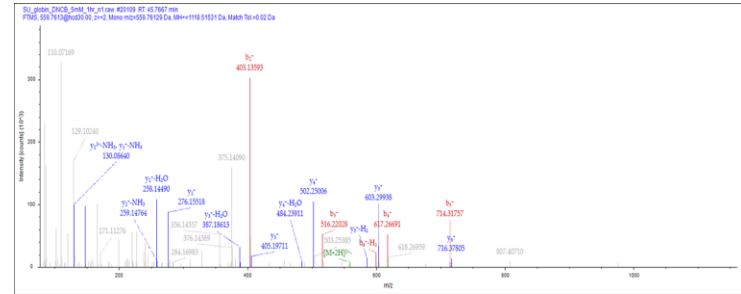
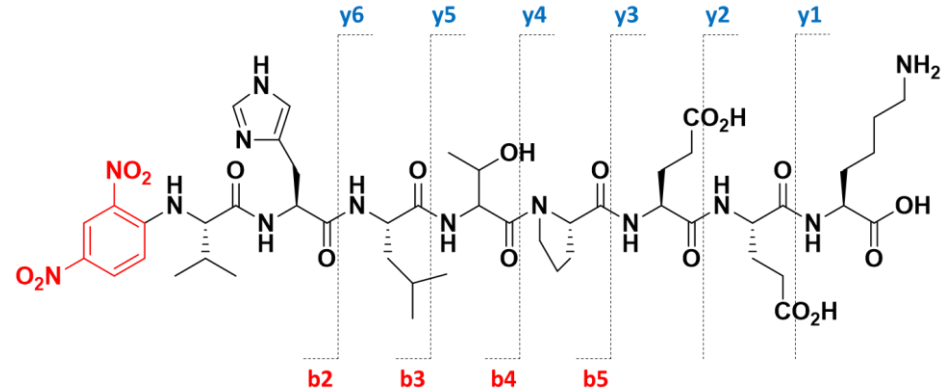
2-MGN



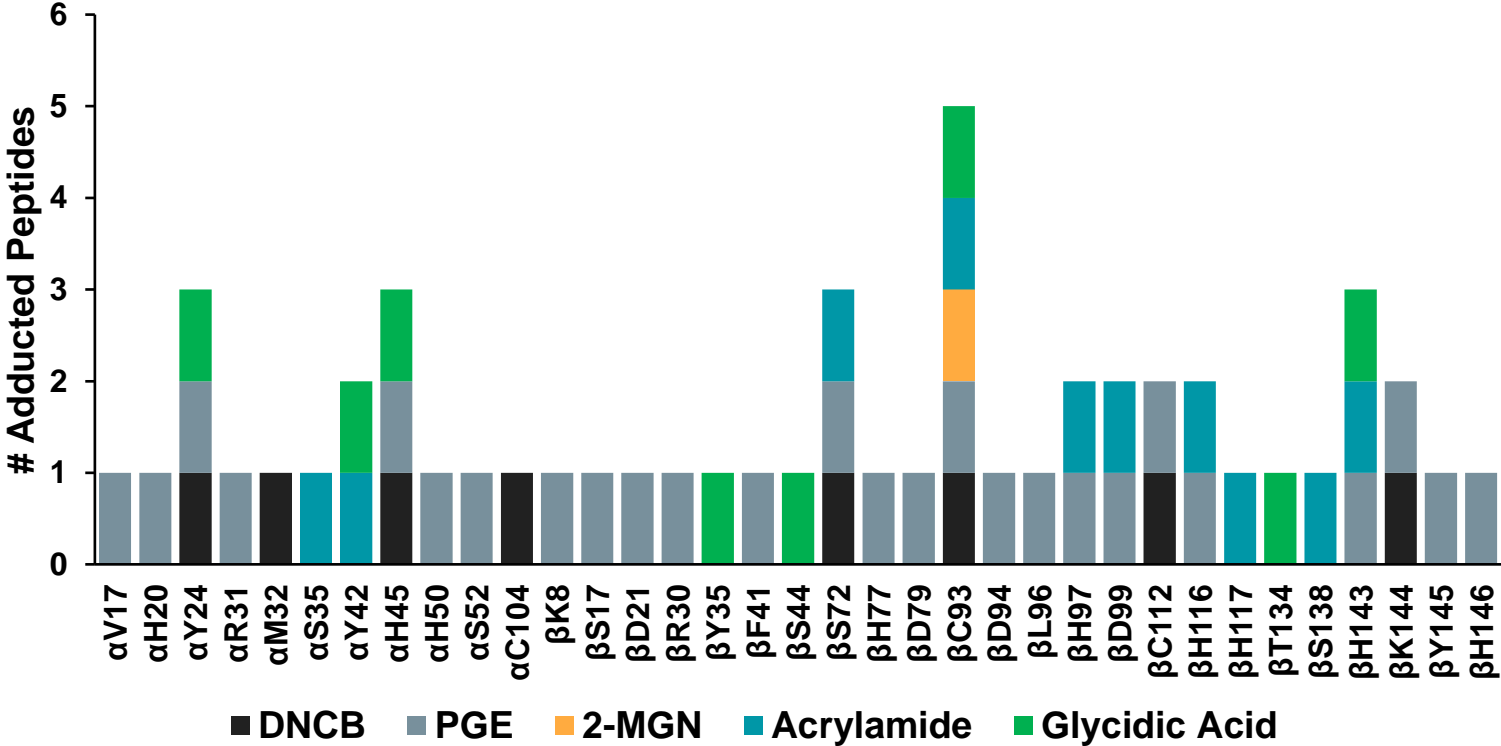
DNCB

Bottom-up proteomics can detect all six adducts at the N-termini

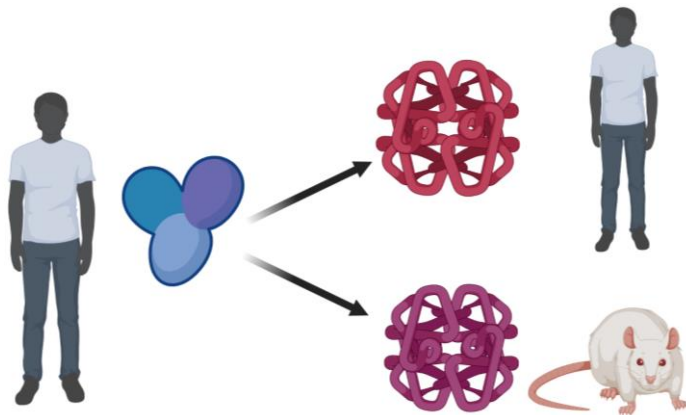
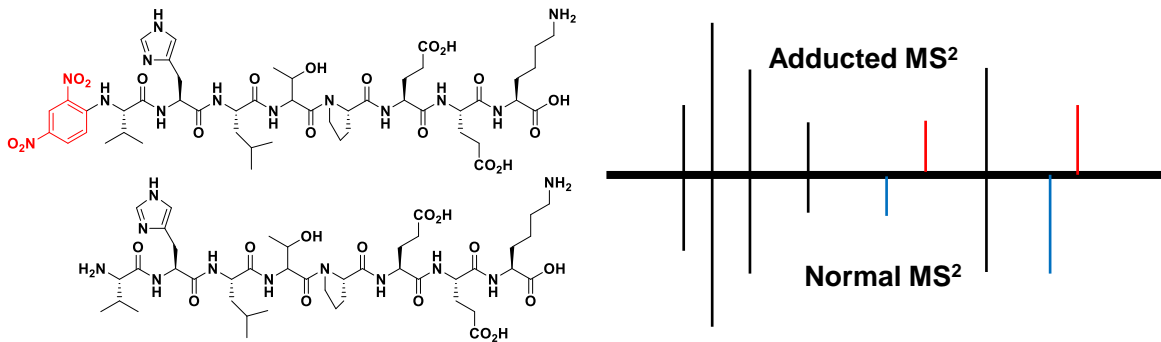
	N-termini	
	Alpha	Beta
DNCB	Not Validated	Validated
PGE	Validated	Validated
2-MGN	No peptide	Validated
Acrylamide	Validated	Not Validated
Acrylic Acid	Validated	Validated
Glycidic Acid	Validated	Validated



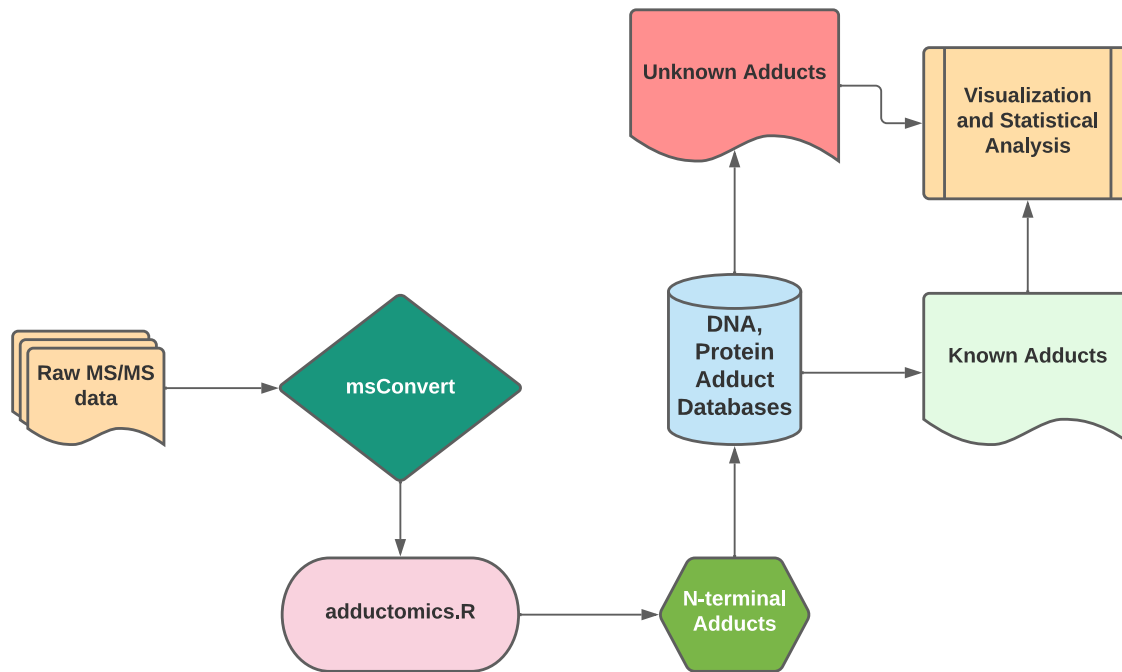
Bottom-up proteomics allows for the detection of side-chain adducts



AdductomicsR has been adapted for hemoglobin adductomics



AdductomicsR has been adapted for hemoglobin adductomics



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- Efstathios Vryonidis
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