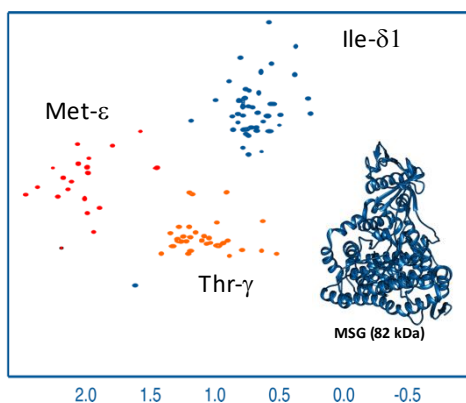
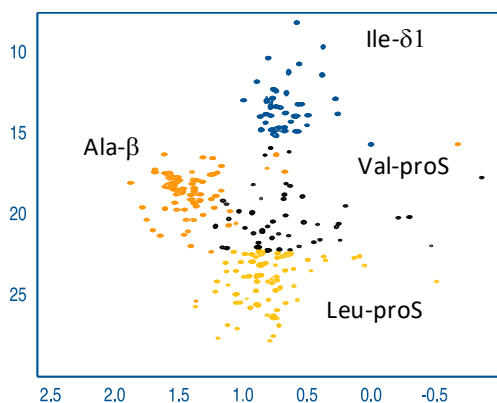


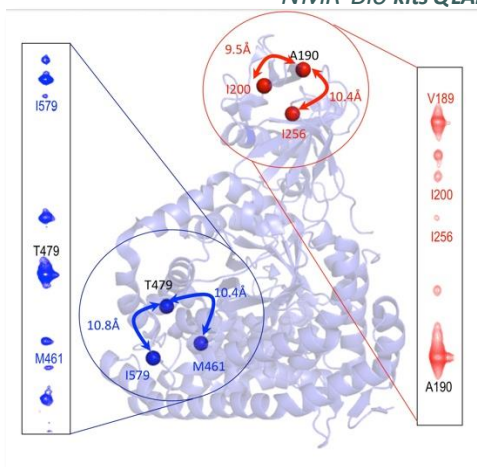
Combinatorial Labeling Kits for Long-range nOes Detection

User-friendly solutions for the simultaneous labeling of any combinations of Ala, Ile, Leu, Met, Thr & Val methyl groups.

NMR-Bio kits include the regio-specific and/or stereo-specific labeling of Ile, Leu, and Val residues. Kits are provided with precise protocols extensively tested *in-vivo* to ensure optimal incorporation of isotopes in targeted methyl groups without detectable scrambling in other positions.



2D Methyl-TROSY and 3D ^{13}C -edited NOESY spectra of MSG 82 kDa labeled using NMR-Bio kits QLAM- $\text{A}^{\beta}\text{I}^{\delta 1}\text{LV}^{\text{proS}}$ & TLAM- $\text{I}^{\delta 1}\text{M}^{\epsilon}\text{T}$



Detection of long-range nOes between methyl probes distant by up to 10 Å in large proteins and complexes

NMR-Bio scrambling free labeling solutions are optimized for the extraction of precise and long-range nOe distance restraints between methyl probes in perdeuterated proteins. Compared to standard 2-keto acids, NMR-Bio acetolactate precursors increase sensitivity by up to a factor of 4, allowing for the detection of structurally meaningful long-range and intermolecular nOes restraints.

References:

Kerfah et al., *J Biomol NMR*. 2015, 61(1):73-82
Kerfah et al., *Curr Opin Struct Biol*. 2015, 32:113-22

Recommended kits:

TLAM- $\text{A}^{\beta}\text{I}^{\delta 1}\text{M}^{\epsilon}/\text{I}^{\delta 1}\text{LV}^{\text{proS}}/\text{I}^{\delta 1}\text{M}^{\epsilon}\text{T}$
QLAM- $\text{A}^{\beta}\text{I}^{\delta 1}\text{LV}^{\text{proS}}/\text{A}^{\beta}\text{M}^{\epsilon}\text{LV}^{\text{proS}}/\text{I}^{\delta 1}\text{LV}^{\text{proS}}/\text{I}^{\delta 1}\text{M}^{\epsilon}\text{LV}^{\text{proS}}$
PLAM- $\text{A}^{\beta}\text{I}^{\delta 1}\text{M}^{\epsilon}\text{LV}^{\text{proS}}/\text{I}^{\delta 1}\text{M}^{\epsilon}\text{LV}^{\text{proS}}\text{T}$
HLAM- $\text{A}^{\beta}\text{I}^{\delta 1}\text{M}^{\epsilon}\text{LV}^{\text{proS}}\text{T}$

NMR-Bio patented precursors are specifically deuterated and supplied as frozen user-friendly kits ready to use without requirement of any further chemical modification. All NMR-Bio kits are calibrated for addition into deuterated M9 culture medium prior to induction. NMR-Bio kits have been optimized to incorporate $^{13}\text{CH}_3$ or $^{13}\text{CHD}_2$ isotopomers in selected methyl groups of proteins, with the possibility to incorporate a linear ^{13}C spin system connecting the specifically labeled methyl to the



backbone nuclei. Kits are provided with precise protocols extensively tested *in-vivo* to ensure optimal incorporation of isotopes in targeted methyl groups without detectable scrambling in other positions.

Examples of kits	$^{13}\text{CH}_3$ groups Labeled
TLAM- $\text{I}^{\delta 1}\text{LV}^{\text{proS}}$	Ile $^{\delta 1}$ Leu $^{\text{proS}}$ Val $^{\text{proS}}$
TLAM-A $\beta\text{I}^{\delta 1}\text{M}^{\epsilon}$	Ala $^{\beta}$ Ile $^{\delta 1}$ Met $^{\epsilon}$
TLAM- $\text{I}^{\delta 1}\text{M}^{\epsilon}\text{T}^{\gamma}$	Ile $^{\delta 1}$ Met $^{\epsilon}$ Thr $^{\gamma}$
QLAM-A $\beta\text{M}^{\epsilon}\text{LV}^{\text{proS}}$	Ala $^{\beta}$ Met $^{\epsilon}$ Leu $^{\text{proS}}$ Val $^{\text{proS}}$
QLAM- $\text{I}^{\delta 1}\text{M}^{\epsilon}\text{LV}^{\text{proS}}$	Ile $^{\delta 1}$ Met $^{\epsilon}$ Leu $^{\text{proS}}$ Val $^{\text{proS}}$
QLAM- $\text{I}^{\delta 1}\text{LV}^{\text{proS}}\text{T}^{\gamma}$	Ile $^{\delta 1}$ Leu/Val $^{\text{proS}}$ Thr $^{\gamma}$
QLAM-A $\beta\text{I}^{\delta 1}\text{LV}^{\text{proS}}$	Ala $^{\beta}$ Ile $^{\delta 1}$ Leu $^{\text{proS}}$ Val $^{\text{proS}}$
PLAM- $\text{I}^{\delta 1}\text{M}^{\epsilon}\text{LV}^{\text{proS}}\text{T}^{\gamma}$	Ile $^{\delta 1}$ Met $^{\epsilon}$ Leu/Val $^{\text{proS}}$ Thr $^{\gamma}$
PLAM-A $\beta\text{I}^{\delta 1}\text{M}^{\epsilon}\text{LV}^{\text{proS}}$	Ala $^{\beta}$ Ile $^{\delta 1}$ Met $^{\epsilon}$ Leu/Val $^{\text{proS}}$
PLAM-A $\beta\text{I}^{\gamma 2}\text{M}^{\epsilon}\text{LV}^{\text{proS}}$	Ala $^{\beta}$ Ile $^{\gamma 2}$ Met $^{\epsilon}$ Leu/Val $^{\text{proS}}$
HLAM-A $\beta\text{I}^{\delta 1}\text{M}^{\epsilon}\text{LV}^{\text{proS}}\text{T}^{\gamma}$	Ala $^{\beta}$ Ile $^{\delta 1}$ Met $^{\epsilon}$ L/V $^{\text{proS}}$ Thr $^{\gamma}$

For any kit including Val-proR & Leu-proR, please inquire !

Our kits are calibrated for 1 L E. coli culture

For any quote request contact us at sales@nmr-bio.com

www.nmr-bio.com



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