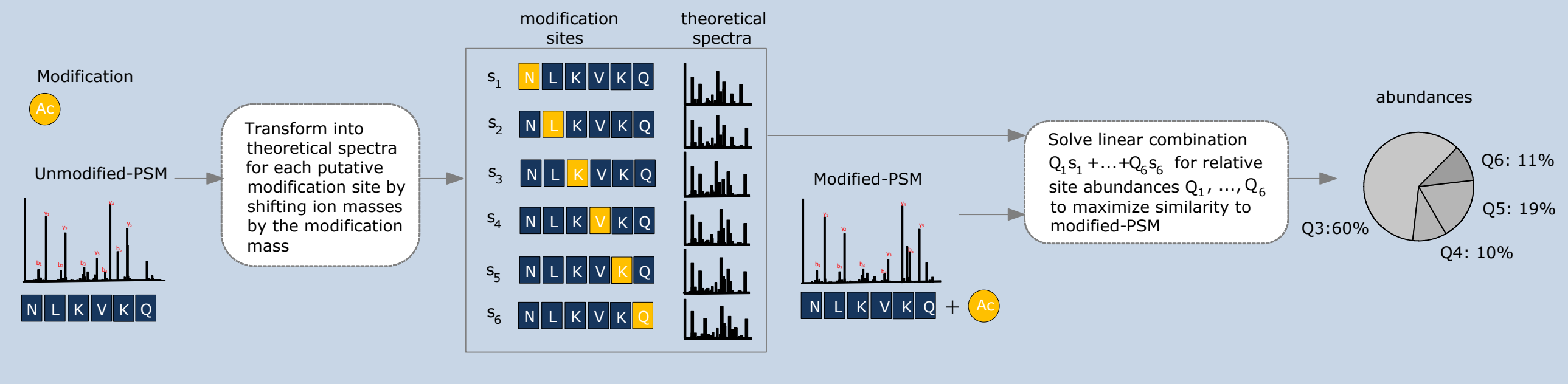
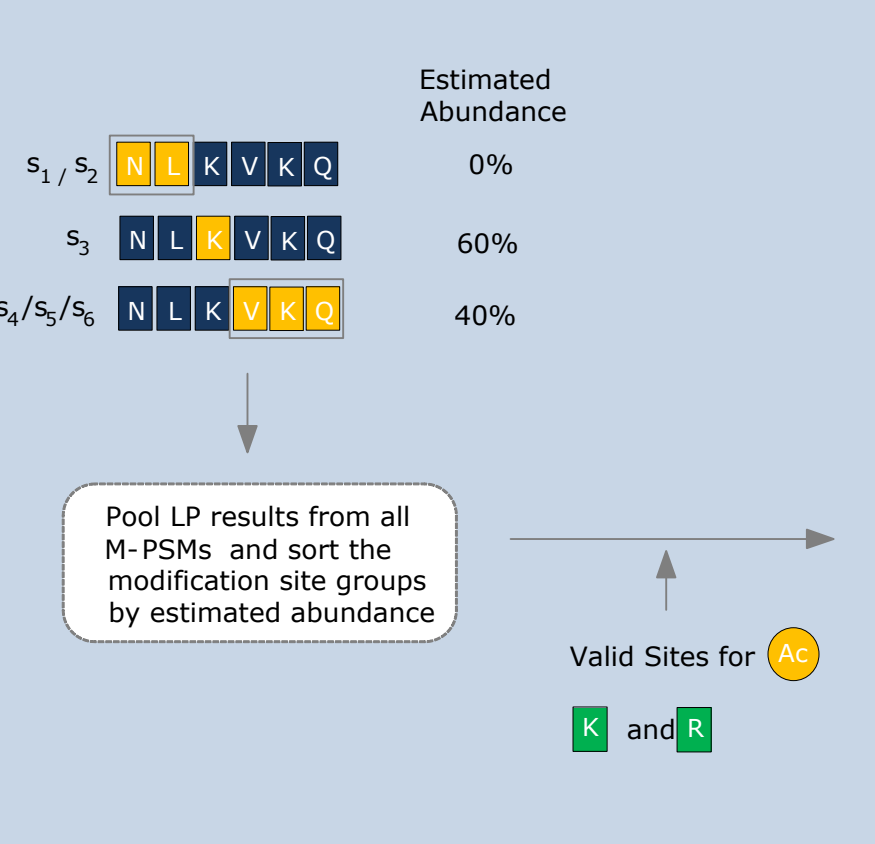


(a1) Scoring Modification Sites



(a2) Grouping Indistinguishable Modification Sites



(b1) Estimating False Localization Rate (FLR)

	Estimated Abundance	Target/Decoy
<b>T K K V D A E F A</b>	90%	✓
⋮	⋮	⋮
<b>G R D P D I E N</b>	60%	✓
<b>N L K V K Q</b>	60%	✓
⋮	⋮	⋮
<b>G R D P D I E N</b>	40%	✗
<b>N L K V K Q</b>	40%	✓
<b>T K K V D A E F A</b>	10%	✗
<b>N L K V K Q</b>	0%	✗

5% FLR threshold

(b2) PTM Site Assignment at a chosen FLR

Unambiguous site	<b>G R D P D K E N</b>
Partially localized site	<b>N K K V K Q</b>
Ambiguous site	<b>T K K V D A E F A</b>
Not localized	<b>T K K V D A E F A</b>
Co-elution	<b>N L K V K Q</b> and <b>N L K V K Q</b>