



**AURIGENE**

Accelerating Discovery

# Peptide Chemistry





- Peptide Design
- Peptide Synthesis:
  - Manual and automated synthesis
  - Solid and Solution Phase synthesis
  - Mg to multi-gram scale
- Peptide Chemistry
  - Linear and branched chain
  - Derivatised peptides: Derivatisation of Lipids / Steroids / Small molecules/ Carbohydrate Conjugated to peptides
  - Conformationally constrained peptides: Lactams, Multiple disulfides, Stapled peptides
  - Labeling – Biotin; Fluorescein
- Route Scouting and Process Development for multi-gram scale Deliverables

## Scale of synthesis of peptides delivered:

- Peptides
  - Peptides with ~ 50 amino acids
    - 1 g at 95% purity
  - Peptides with ~ 20 – 30 amino acids
    - 5 g at 95% purity
- Peptidomimetic purification (without HPLC)
  - 800 g at 95% purity
- Elemental analysis\*
- Amino acid analysis \*
- CD\*
- MALDI\*



# Complex Peptides Expertise



- Long and Branched chain peptides
- Conformationally constrained cyclic peptides
  - Cysteine and Lactam bridging
  - Stapled peptides
- Phosphopeptides
- Strategies to improve pK properties:
  - Lipidation, PEGylation
  - Peptides with bioisoesters
  - Steroid derivatisation
- Labeled peptides
- Masked peptide aldehydes
- Peptide based affinity ligands
- Peptidomimetics
- Lipids: Phospholipids, cholesterol-lipid conjugates, Lipid phosphates

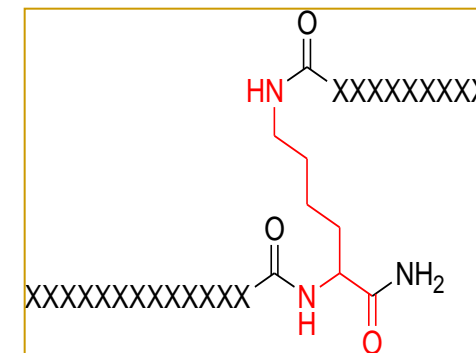
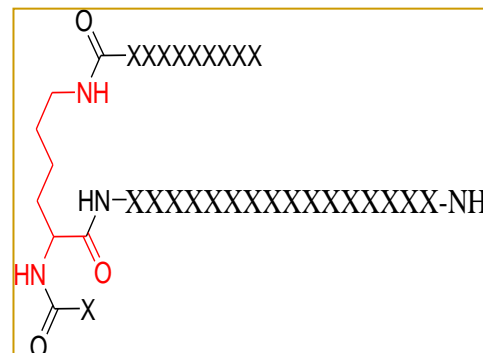




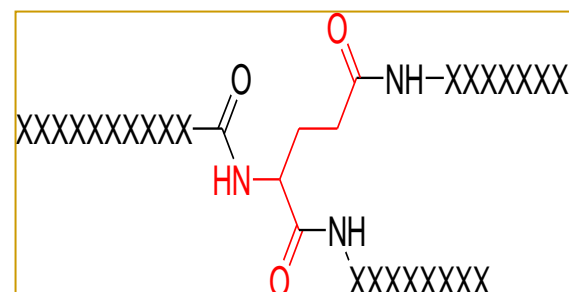
# Illustration-1: Long Chain and Branched Chain Peptides

- Long Chain Peptides (40-60 aa)
  - Unnatural amino acids
  - D-amino acids
  - Phospho amino acids
- Branched Chain Peptides:
  - Orthogonal protection strategy
  - >270 peptides of ~ 60 aa

## Using Lys (Dde) or Lys (Alloc)



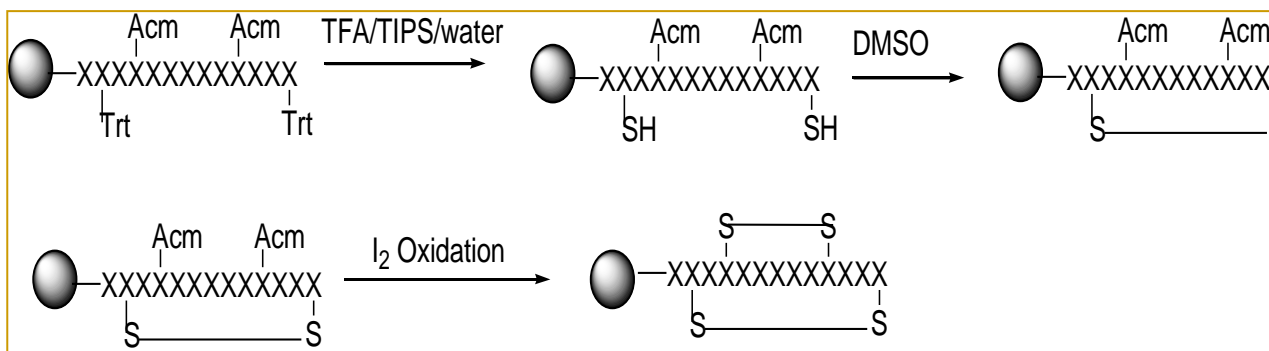
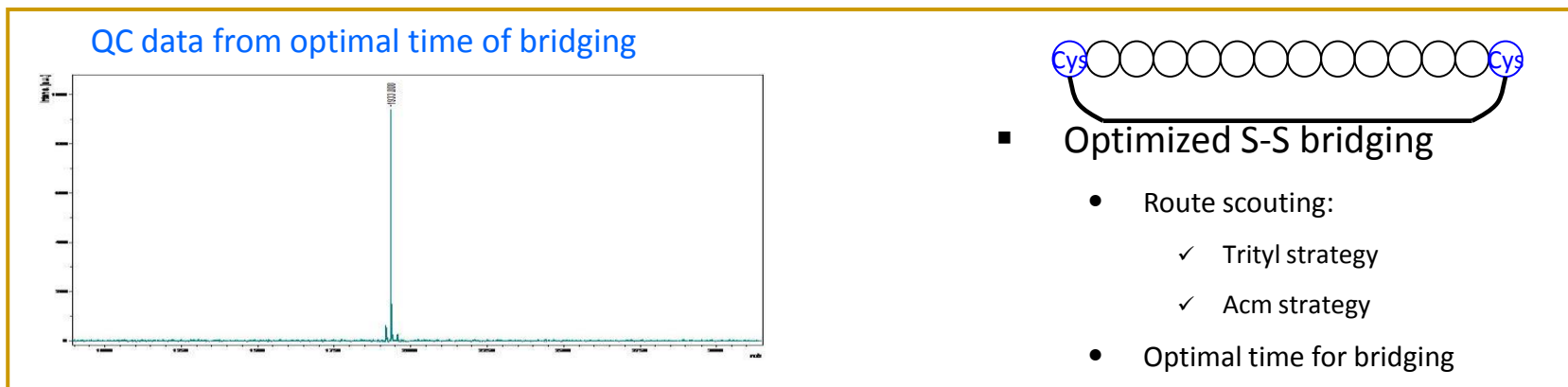
## Glu(ODmab) or Glu (OAll)





# Illustration-2: Cysteine Bridging

- Conformationally constrained peptides
- Cysteine chemistry (Disulphide linkage)



- Combination of two different orthogonal protecting groups
- The largest chain is cyclised first followed by the shorter one







METRICS	2007	2008	2009	2010
No. of FTE's	3	3	3	3
Total Projects Awarded	115	85	171	52
Total Projects Completed	107	77	144	88

## Class of compounds delivered-2009

Type	#	Qty
Natural amino acids	27	410 mg
Peptidyl resin	28	53.2 mmol
Lactam	34	480 mg
Disulfide/Nested	12	81 mg
Un-natural	30	640 mg
Pegylated peptide	1	1.2 g
Stapled peptide	3	23 mg
Reagents	5	20 g

## Class of compounds delivered-2010

Type	#	Qty
Un-natural/ d-AA-20 mer	8	278 mg
Un-natural/ d-AA- 30-46	10	316.5 mg
Peptidyl resin	22	72.7 mmol
Head to tail lactam	2	40 mg
Disulfide	4	80 mg
Mono stapled	20	498 mg
Bis-stapled peptide	10	97 mg
Stapled reduction	2	73 mg

***Consistently exceeding client's expectations !***



# Aurigene's Value Proposition



- High-quality Infrastructure
- Scientific expertise with established track record
  - Helped clients solve bottlenecks
- Productivity Metrics
- Scalable Resources
- Significant Cost savings assured
- Dedicated Project managers (Confidentiality, Data management, Logistics)
- Flexible business model
  - Fee for service
  - FTE contracts
  - Success based payments
  - Flexibility to scale-up from small to large engagements
  - On time & In full delivery record





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# Thank you!

