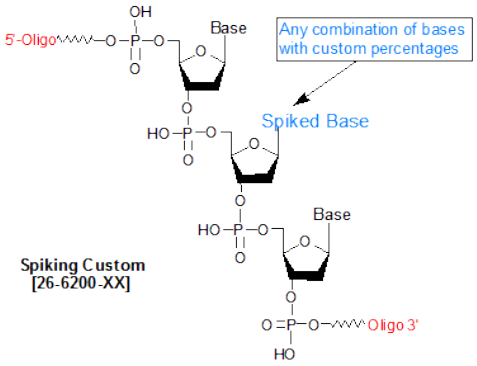
Spiking-03

Category	DNA Oligo Synthesis
Modification Code	CS03
Reference Catalog Number	26-CS03
5 Prime	Y
3 Prime	Y
Internal	Y
Molecular Weight(mw)	308



DNA & RNA Oligo Custom Spiking. The prices listed is for one custom spiking mix setup, additional standard per base charges apply.

Click here for a complete list of Degenerate Bases & Spiking Oligo Modifications

Custom spiking [CSXX] is the addition of differing molar concentration of bases at a single position, this is different from degeneracy at a position based on codons. Codon based degeneracy is usually equimolar concentration of each base at the same position (done at no extra charge for all internal and 5' position, see order form for single letter IUB codes). Custom spiking (example, 10% A, 75% C, 5% G & 10% T or U) has to be specified as required in the comments section of the sequence. Sequence Entry Example

Example of denoting custom spiking [CSXX] is to use code [CS01] or [CS02] etc.and write in the comment section your calculated percentage of spiking, example [CS01]=10% A, 75% C, 5% G & 10% T or U. Similarly, [CS02]= 15% A, 70% G, 5% C & 10% T or U and [CS03] and onward for more spiked positions.

Custom Spiking Base Percentage Codes and Sequence Entry

Code for Sequence Entry

Percentage Spiked Bases

Short Notation [CS01] 10% A, 75% C, 5% G & 10% T or U 10750510 [CS02] 15% A, 70% C, 5% G & 10% T or U 15700510 Please write the exact spiking code , percentage composition of each site in the comments section of the oligo sequence submission field.

Sequence: ACGTGTGCAGT[CS01]ACCCGTACNBR[CS02]AGCATCATC[CS01][CS01][CS02]ACGTCGC

Custom column has to be prepared when the degeneracy and custom spiking is at the 3' position. Customers who wish custom spiking at certain positions of their oligo must include the relevant specifics (position and spiking composition) in the comments section of the online order form for that particular oligo.

Degenerate Base

Degenerate base means more than one base possibility at a particular position, this is usually the case when a DNA sequence is derived from amino acid sequence with codon based sequence. An oligo sequence can be synthesized with multiple bases at the same position, this is termed as degenerate base also sometime referred as 'wobble' position or 'mixed base'.

IUB (International Union of Biochemistry) has established single letter codes for all possible degenerate possibilities. An example is "R" that is A+G at the same position with 50% of the oligo sequence will have an A at that position, and the other 50% have G. A degenerate base position may have any combination of two, three, or four bases.

Chemical synthesis of oligos using IUB degenerate bases is programmed and automated to deliver the percentage of each base for reaction at that specific base position; example for the letter "N", 25% of each base will be delivered for coupling. The delivery and coupling may not be 100% accurate and efficient for each base and thus approximately 10% deviation should be expected and considered in the final oligo sequence.

For degenerate (mixed bases) positions use the following IUB codes.

R=A+G
Y=C+T
M=A+C
K=G+T
S=G+C
W=A+T
H=A+T+C
B=G+T+C
D=G+A+T
V=G+A+C
N=A+C+G+T

There is no additional charge if the degenerate mixed base is at an internal position or at the 5' end. Degenerate mixed base charges are only for 3' end positions. A custom column charge is applied. See the following link for details. http://www.genelink.com/newsite/products/custspike.asp

Alternate Oligo Design Strategies The use of degenerate bases leads to complexity of oligo sequence and thus reduction in the percentage of the unique sequence. Consider the use of modifications such as Inosine that hybridizes to all four bases. See the listing of modifications as substitutes to reduce complexity if degenerate bases are used. Degenerate Base Modifications