

# Cost/Benefit Comparison of Antibodies & Aptamers

	Time to Develop	Cost to Develop	Time to manufacture	Cost to manufacture
<b>Antibody</b> (1,2) (monoclonal) - Mammalian cells	> 8 months	~\$20,000	3 months (5-20 grams)	\$300/gram
- Transgenic plants	3 years	N/A	1 year (milligrams)	\$0.10/gram
- Transgenic animals (goat)	3 years	N/A	10 months (50-100 grams)	\$1-2/gram
<b>Aptamer</b> (3) (monoclonal)	4-6 months	Inquire	2 days (milligrams)  2 weeks (grams)	< \$300/gram*  < \$50/gram

\*Typical size of an antibody is 180 KD, whereas that of an aptamer is < 30 KD.

## References:

- (1) Elizabeth E. Hood, et al., Monoclonal antibody manufacturing in transgenic plants- myths and realities, Current Opinion in Biotechnology, 2002, 13: 630-635.
- (2) K. John Morrow, Jr., Economics of Antibody Production: Various Options Available for Large-Scale Bioprocessing, Genetic Engineering News, April 1,2002, volume 22, No. 7.
- (3) Current Protocols in Nucleic Acid Chemistry, Sections 4 & 9, John Wiley & Sons, 2002.