Cost/Benefit Comparison of Antibodies & Aptamers

	Time to Develop	Cost to Develop	Time to manufacture	Cost to manufacture
Antibody (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
(3) **Aptamer*** (monoclonal)	4-6 months	Inquire	2 days (milligrams) 2 weeks (grams)	< $300/gram† < $50/gram‡

*Typical size of an antibody is 180 kDa, whereas that of an aptamer is < 30 kDa.
†Idealized raw materials cost for small-scale manufacturing.
‡Idealized raw materials cost for kilogram-scale manufacturing.

References:

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(3) Yuri E. Khudyakov, et al. "Chemical Synthesis of Oligonucleotides: From Dream to Automation." *Artificial DNA: Methods and Applications*. Boca Raton: CRC Press. 2002