CERTIFICATE OF ANALYSIS

PRODUCT: Recombinant Human Tumor Necrosis Factor FOR RESEARCH
BATCH NO.: Lot specific MANUFACTURING DATE: Lot specific
SIZE: All pack sizes RETEST DATE: Lot specific
TEST BASIS: ENTERPRISE STANDARD
CATALOG #: 1130-01

Item	**Standard**	**Result**
Characteristics	White Freeze-dried Powder	Conformed
pH	7.0±0.5	7.02
SDS-PAGE Electrophoresis Purity	>95%	Conformed
HPLC Purity	>95%	97.86%
Specific Biological Activity	>2.0×10^7 IU/mg ED_{50} (L929) = <0.05 ng/ml	2.98×10^7 IU/mg Conformed
Molecular Weight	17.5±1.8 KDa	Conformed
Bacterial Endotoxins	<1.0 EU/μg rHuTNF	<0.02 EU/μg
The product is tested according to the enterprise standard. The result is QUALIFIED.		

* Gold Biotechnology, Inc. provides this Certificate of Analysis in good faith and to the best of its knowledge. It should not be substituted for the user's own raw material quality control. This material is for laboratory use only.

Gold Biotechnology, Inc.
1328 Ashby Rd.
St. Louis, MO 63132
P: (314)890-8778
F: (314)890-0503
E: contactgoldbio86@goldbio.com

Report date: 4/5/2013