

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
May 11, 2010**

**ORDER GRANTING CONFIDENTIAL TREATMENT
UNDER THE SECURITIES EXCHANGE ACT OF 1934**

ARCA biopharma, Inc.

File No. 000-22873 - CF# 24818

ARCA biopharma, Inc. submitted an application under Rule 24b-2 requesting confidential treatment for information it excluded from the Exhibits to a Form 10-K filed on March 4, 2010.

Based on representations ARCA biopharma, Inc. that this information qualifies as confidential commercial or financial information under the Freedom of Information Act, 5 U.S.C. 552(b)(4), the Division of Corporation Finance has determined not to publicly disclose it. Accordingly, excluded information from the following exhibit will not be released to the public for the time period specified:

Exhibit 10.27 through December 2, 2012

For the Commission, by the Division of Corporation Finance, pursuant to delegated authority:

Sonia Gupta Barros
Special Counsel