



June 13, 2017

VIA EDGAR

United States Securities and Exchange Commission  
Division of Corporate Finance  
100 F Street, N.E.  
Washington, D.C. 20549

Attn: Johnny Gharib

**RE: AcelRx Pharmaceuticals, Inc.**  
**Registration Statement on Form S-3**  
**Filed June 5, 2017**  
**File Number: 333-218506**

Ladies and Gentlemen:

Pursuant to Rule 461 under the Securities Act of 1933, as amended, the undersigned registrant hereby requests that the Securities and Exchange Commission (the "Commission") take appropriate action to cause the above-referenced Registration Statement on Form S-3 (the "Filing") to become effective at 4:00 p.m. Eastern Time on Wednesday, June 14, 2017, or as soon thereafter as is practicable.

Very truly yours,

**AcelRx Pharmaceuticals, Inc.**

/s/ Jane Wright-Mitchell

By: Jane Wright-Mitchell  
Chief Legal Officer

cc: Mark B. Weeks  
Robert W. Phillips  
Cooley LLP