



**MP Biomedicals, LLC**

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## Certificate of Analysis

**Product Description:** beta-Nicotinamide Adenine Dinucleotide, Oxidized, Free Acid  
**Catalog Number:** 160047  
**Lot:** R20250

**Formula:** C<sub>21</sub>H<sub>27</sub>N<sub>7</sub>O<sub>14</sub>P<sub>2</sub>·xH<sub>2</sub>O  
**CAS #:** 53-84-9  
**Physical Description:** White Powder

**Formula Weight:** 663.4 (anhyd.)  
**Storage:** -0°C, desiccate

| Test            | Specification        | Result               |
|-----------------|----------------------|----------------------|
| Identity Test   | Passes               | Passes               |
| Purity          | ≥99%                 | 99.6%                |
| FTIR            | Conforms to Standard | Conforms to Standard |
| pH (1% aq soln) | 2 - 4                | 2.92                 |
| Loss on Drying  | Report Result        | 8.7%                 |
| □ max (water)   | 259 ± 3 nm           | 260                  |
| OD250/OD260     | 0.8 ± 0.15           | 0.83                 |
| OD280/OD260     | 0.2 ± 0.15           | 0.19                 |

OD340/OD260: 0.44

  
07/11/2005 - Joseph Dietz, Ph.D.  
MP Biomedicals, LLC.  
Technical Director

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