Nano-trypsy™
Magnetic nano particles for protein digestion

Product Description:

Nano-trypsy™ are nano sized magnetic particles coated with trypsin. These particles are able to digest simple or complex protein mixes. Due to it magnetic properties they are very easy to separate from the supernatant. Nano scale size turns this particles into a new and improved device to preform protein digestion with high efficiency.

Product Specifications:

Lot : 00001

Production date : 19/01/2017
Expiration date : 19/01/2018

Volume: 1 mL

Store the Nano-trypsy™ at +4ºC. Do not freeze.
Always shake and sonicate Nano-trypsy™ before use to enable product homogenization.

Features	Specifications (for 96 Well Format)
Ratio Trypsin/Protein	12 to 60
Technology	Iron magnetic nanoparticles, magnetic separation
Color	Black

Nan@rts, www.proteomass.org, Portugal
Tel.: +351 919 404 933 E-mail: info@nanoarts.org

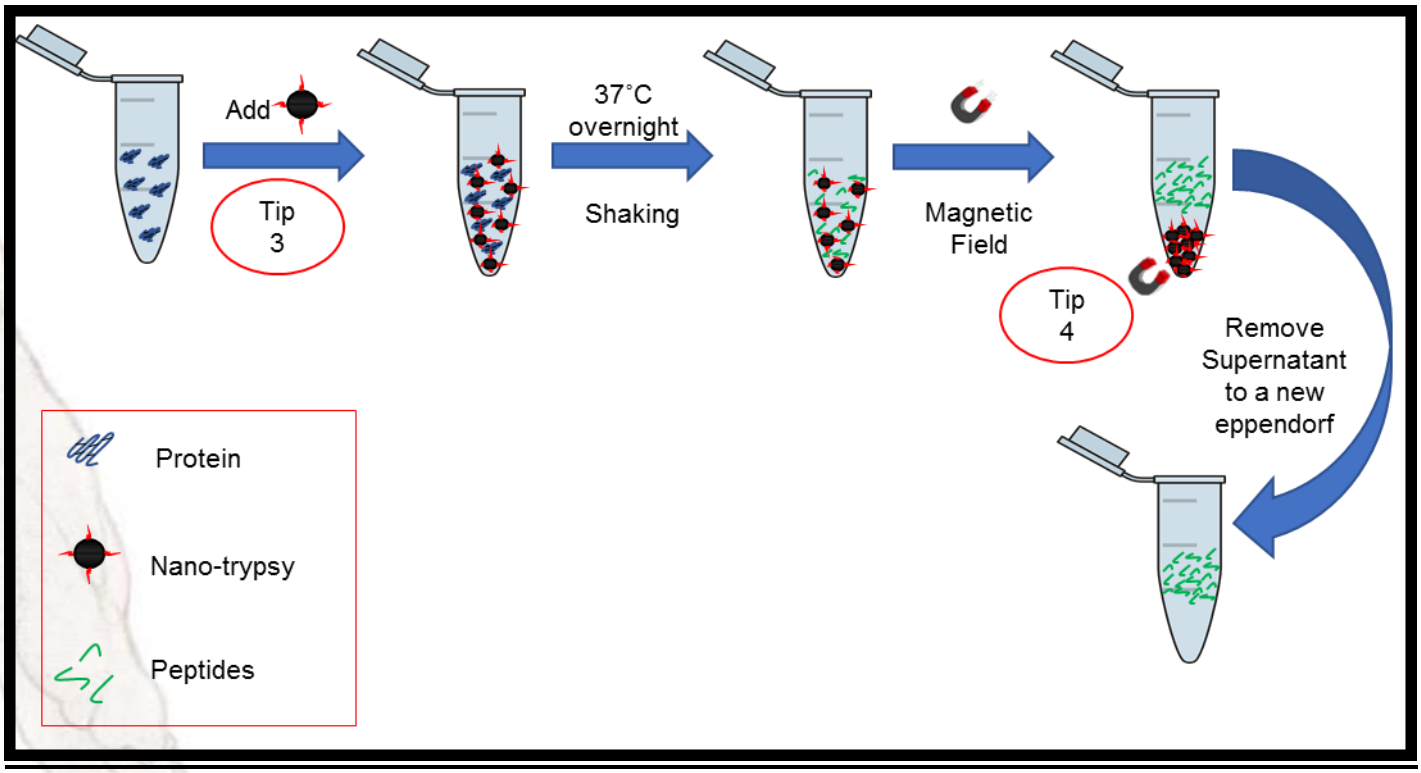
Equipment and Reagents to be supplied by user:

- Eppendorfs
- Ammonium Bicarbonate 12.5mM/2%Acetonitrile (Solvent)
- Shaker

Procedure for protein digestion:

The protocol for the use of Nano-trypsy™ for protein digestion is as follow (To adapt according to the amount of protein you wish to digest). The protocol described here is recommended to digest 1 to 10µg of protein. **The ratio of Trypsin/Protein recommended is 60.**

Figure 1. Protocol scheme for protein digestion. Please mind the quick-tip list for more detailed procedure.



Quick tip list:

Tip 1. **Shake and Sonicate Nano-trypsy™ to ensure good homogenization and to avoid agglomerates.**

Tip 2. **Before adding Nano-trypsy™ to the protein mix shake to ensure good homogenization.**

Tip 3. **Add 60 µg of trypsin per 1 µg of Protein**

Tip 4. **To remove the supernant without any particles use a magnet in the bottom of the Eppendorf.**

Nano-trypsy™
Magnetic Beads
Material Safety Data Sheet

1. **Chemical Product and Company Identification:**

Product Name: Nano-trypsy™ magnetic nano sized particles coated with trypsin

Product use: For Research use only

Manufacturer: Praceta Jerónimo Dias N12 2-A St. António de Caparica. 2825-466 Costa de Caparica, Portugal; +351 919 404 933; jlcm@fct.unl.pt

Emergency telephone number: In case of medical emergency, call 911. Contact your local Poison Control Center.

2. **Hazards Identification:**

Emergency overview: Black, Clear with black precipitate, Liquid, Odorless, Nonflammable aqueous solution.

Physical Hazards: Sodium azide forms explosive compounds with heavy metals. This product contains concentrations of azide <0.1% (w/w) which with repeated contact with lead and copper commonly found in plumbing drains may result in the build up of shock sensitive compounds.

Potential Health Effects Summary: This product does not meet EU, OSHA or WHMIS criteria for hazardous materials.

Potential Environmental Effects: Not available.

3. **Composition and Information on Ingredients:**

Hazardous Ingredients: None.

4. **First Aid Measures:**

Inhalation: If powder is inhaled, move exposed individual to fresh air. If individual is not breathing, begin artificial respiration immediately and obtain medical attention.

Eye Contact: If product enters eyes, wash eyes gently under running water for 15 minutes or longer, making sure that the eyelids are held open. If pain or irritation occur, obtain medical attention.

Skin Contact: In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. If pain or irritation occur, obtain medical attention.

Ingestion: If ingested, wash mouth out with water. If irritation or discomfort occurs, seek

medical attention.

5. Fire Fighting Measures:

Flammable Properties: Nonflammable aqueous solution.

Extinguishing Media: Use extinguishing media suitable for surrounding fire.

Special Fire and Explosion Hazards: No special hazards determined.

Hazardous Combustion Products: No combustion products posing significant hazards are expected from this product (an aqueous solution).

Protective Equipment for Firefighters: Self-contained breathing apparatus is recommended for firefighters in all chemical fire situations.

6. Accidental Release Measures:

Personal Precautions: Use good laboratory procedures; avoid eye and skin contact.

Spill and Leak Procedures: Absorb spilled material with an appropriate inert, non-flammable absorbent and dispose according to local regulations.

Environmental Precautions: Contain spill to prevent migration.

7. Handling and Storage:

Handling Precautions: Use good laboratory procedures; avoid eye and skin contact.

Recommended Storage Conditions: Keep away from incompatible material. To maintain efficacy, store at +4°C, do not freeze.

8. Exposure Controls and Personal Protection:

Exposure Limits: US OSHA: None established / ACGIH: None established / DFG MAK: None established / NIOSH: None established / Japan: None established.

Engineering Controls: No special engineering controls are required. Use with good general ventilation.
Respiratory Protection: Under normal conditions, the use of this product should not require respiratory protection. If aerosols are generated during use, the use of respiratory protection should be evaluated by a qualified professional.

Eye Protection: Safety glasses or chemical goggles should be worn to prevent eye contact. Refer U.S. OSHA 29 CFR 1910.133, European Standard EN166 or appropriate government standards.

Skin Protection: Impervious gloves, such as Nitrile or equivalent, should be worn to prevent skin contact. Refer U.S. OSHA 29 CFR 1910.138, European Standard EN374 or appropriate government standards.

9. Physical and Chemical Properties:

Physical State: Liquid.
Color: Black.
Transparency: Clear with black precipitate.
Odor: Odorless.
Odor Threshold: Not applicable.
pH: Not available.

Freezing Point: Not available.
Boiling Point: Not available.
Flash Point: Not applicable.

Evaporation Rate: Not available.
Flammability (Solid, Gas): Not applicable.
Flammable Limits: Not available.

Vapor Pressure: Not available.
Vapor Density: Not available.
Specific Gravity: Not available.

Water: Miscible.
Organic: Not available.
Coefficient of Water/Oil Distribution: Not available.

Autoignition Temp.: Not applicable.
Decomposition Temperature: Not available.
Percent Volatiles: Not applicable.

10. Stability and Reactivity:

Stability: Stable under normal temperatures and pressures.

Hazardous Incompatibilities: Strong acids, strong bases, strong oxidizers, metals and metallic compounds, sodium azide forms explosive compounds with heavy metals. This product contains concentrations of azide <0.1% (w/w) which with repeated contact with lead and copper commonly found in plumbing drains may result in the build up of shock sensitive compounds.

Hazardous Decomposition Products: When stored as labeled, no known hazardous decomposition products are formed during the shelf-life of this product.

Conditions to Avoid: Avoid contact with incompatible materials.

11. Toxicological Information:

Toxicity Data for Hazardous Ingredients: Not applicable

Primary Routes of Exposure: The most likely routes of exposure are skin and eye contact. Inhalation may occur if mists are formed in product use.

Potential Effects of Acute Exposure: None identified.
Potential Effects of Chronic Exposure: None identified.
Symptoms of Overexposure: None identified.

Carcinogenicity: No ingredients in this product are listed as carcinogens by ACGIH, IARC, NTP, OSHA or 67/548/EEC Annex I.

Other Effects: None identified.
Conditions Aggravated by Exposure: None identified.
Other Effects: None identified.
Conditions Aggravated by Exposure: None identified.

12. Ecological Information:

Ecotoxicity: No information available.

Biodegradability: No information available.

Bioaccumulation: No information available.

Mobility: No information available.

Other Adverse Effects: No information available.

13. Disposal Considerations:

Waste Disposal: Dispose of waste product, unused product and contaminated packaging in compliance with federal, state and local regulations. If unsure of the applicable requirements, contact the authorities for information.

14. Transports Information:

Transportation of this product is not regulated under ICAO, IMDG, US DOT, European ADR or Canadian TDG.

15. Regulatory Information:

US Federal and State Regulations:
- SARA 313: Sodium Azide is subject to reporting requirements of Section 313, Title III of SARA. CERCLA RG's, 40 CFR 302.4: Sodium Azide is listed.
- California Proposition 65: No ingredients listed.
- Massachusetts MSL: Sodium Azide is listed.
- New Jersey Dept. of Health RTK List: Sodium Azide is listed.
- Pennsylvania RTK: Sodium Azide is listed.

EU Labeling Classification: Preparation not classified.

Canada: This product does not meet WHMIS criteria for hazardous materials.

Ingredients on Ingredient Disclosure List: Sodium Azide

Ingredients with unknown toxicological properties: None
Some hazardous ingredients listed in Section 15 are below OSHAs and WHMIS' 1.0% **w/w (0.1% for carcinogens) or** EU's ingredient specific concentrations required for reporting in Section 3.

16. Other information:

PROTEOMASS does not make any representations, guaranties or warranties as to the accuracy of the information provided and is intended only to describe the product for the purposes of health, safety and environmental requirement. It is expressly understood and agreed that PROTEOMASS shall in no way be deemed or held to be obligated, liable, or accountable upon or under any guaranties or warranties, express or implied, statutory, by operation of law, or otherwise, in any manner or form, including any implied warranty of merchantability or fitness for a particular purpose, that in any way relates to or arises out of the information provided in this Safety Data Sheet.