bio-techne®

N21-MAX Supplements

An Optimized Alternative to Standard B27 Supplements

High Quality

The N21-MAX Serum-free Media Supplement improves upon the traditional B27 and NS21 neuronal supplements, offering a formulation that is optimized for the reliable maturation, consistent health, and superior function of neurons in culture.

Affordable

Lower prices and better value than the leading competitor supplements.

Consistent

Each lot of N21-MAX is checked for performance consistency by our in-house quality team, taking the burden of batch-to-batch screening off of your to-do list. Troubleshooting inconsistencies in media supplement performance can hamper lab productivity and decrease confidence in your data.

Serum-Free

N21-MAX Media Supplements are nutrient-rich and serum-free.

Diverse Selection

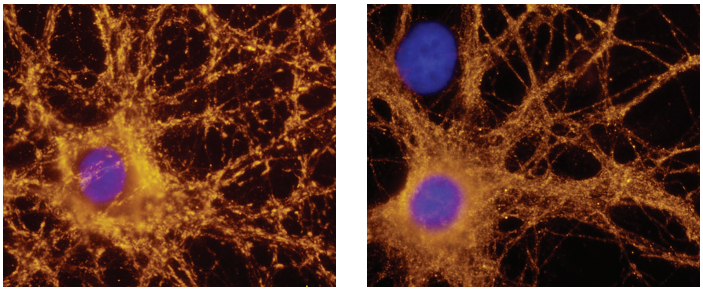
Insulin-free (AR009) and Vitamin A-free (AR010) variations of N21-MAX are available.

MEDIA SUPPLEMENT	CATALOG #	DESCRIPTION
N21-MAX Media Supplement	AR008	For superior and consistent neural and stem cell cultures
N21-MAX Insulin-free Media Supplement	AR010	For studies of insulin secretion or insulin receptor function
N21-MAX Vitamin A-free Media Supplement	AR012	For controlled neural stem cell expansion and neuronal cell culture maturation

Neural Cell Culture

N21-MAX provides an optimized nutrient environment for the reliable maturation, consistent health, and superior function of neurons in culture.

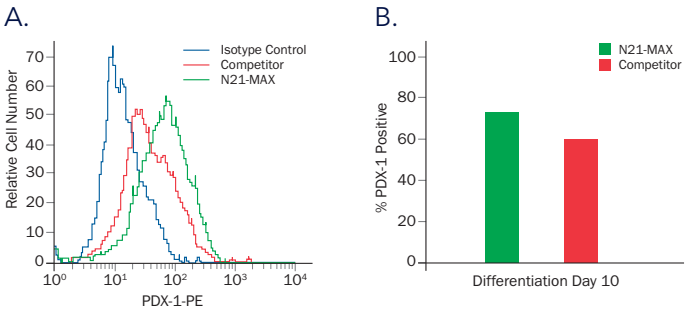
N21-MAX **Competitor**



Increased Synaptic Puncta and Neurite Outgrowth of Primary Neurons Cultured in N21-MAX. E18 rat hippocampal neurons were grown for 21 days *in vitro* in media supplemented with either N21-MAX Media Supplement (Catalog # AR008) or the neural media supplement from the most widely-used competitor. Staining for Synaptotagmin (yellow) showed more robust synaptic puncta and increased neurite outgrowth in neurons cultured in N21-MAX compared to those cultured in competitor media. Cells were stained with a Mouse Anti-Rat Synaptotagmin-1 Monoclonal Antibody (Catalog # MAB4364) followed by the NorthernLights™ (NL)557-conjugated Donkey Anti-Mouse IgG Secondary Antibody (Catalog # NL007). Nuclei were counterstained with DAPI (blue).

Stem Cell Differentiation and Maintenance

N21-MAX improves stem cell differentiation and increases the viability and health of differentiated cell types during long-term cell culture conditions.



N21-MAX Media Supplement Increases Efficiency of Pancreatic Cell Differentiation. Differentiation of PDX-1⁺ pancreatic cells from induced pluripotent stem cells (iPS2) was performed with base media containing either the N21-MAX Media Supplement (green) or the competitor equivalent (red). **A**) Compared to competitor media, N21-MAX improved pancreatic cell differentiation as observed by flow cytometry. **B**) Bar graph quantifying PDX-1⁺ cells in N21-MAX and the competitor media.

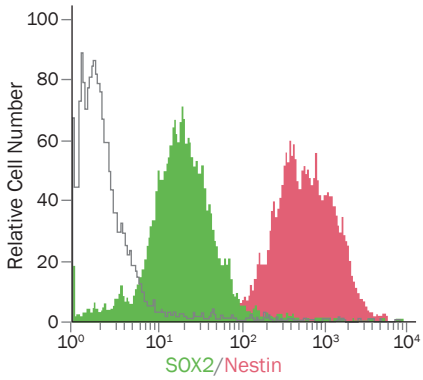
N-2 MAX Media Supplement

For Culturing Neurons, Neural Progenitors, and Stem Cells

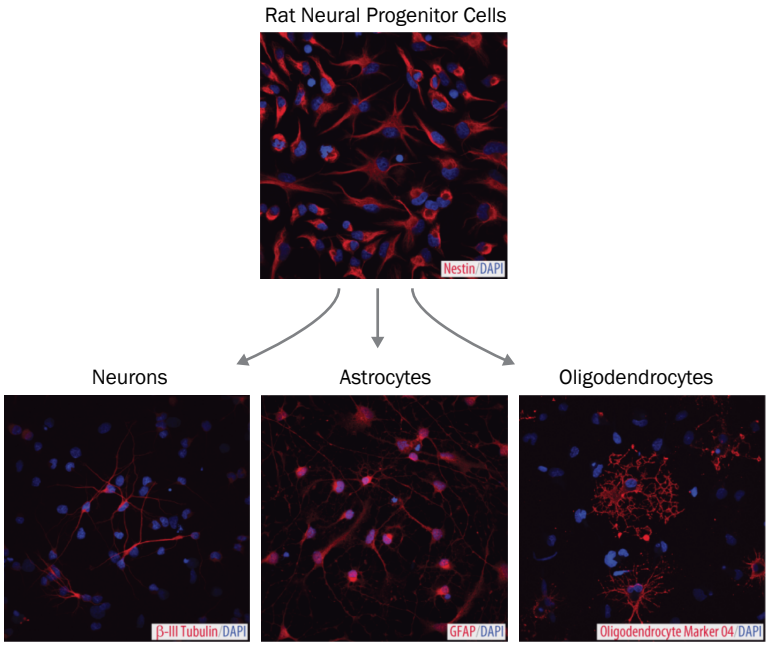
PRODUCT	CATALOG #	DESCRIPTION
N-2 MAX Media Supplement (100x)	AR009	Optimized for neural progenitor cells and their differentiated derivatives; contains recombinant human insulin
N-2 Plus Media Supplement	AR003	Optimized for neural progenitor cells and their differentiated derivatives; contains bovine insulin

Key Benefits

- Optimized for neural and stem cell cultures
- Recombinant Human Insulin ensures low experimental variability
- Consistent, chemically-defined, and serum-free formulation
- Ideal for NPC derivation, maintenance, and differentiation
- Enhances performance of stem cell differentiation protocols



Neural Progenitor Cells Expanded with N-2 Plus Media Supplement Express Nestin and SOX2. Rat Cortical Stem Cells (Catalog # NSC001) were cultured for 7 days in media supplemented with 1X N-2 MAX Media Supplement (Catalog # AR009) and 20 ng/mL of Recombinant Human FGF basic (Catalog # 233-FB). The cells were stained with a PE-conjugated Mouse Anti-Human Nestin Monoclonal Antibody (Catalog # IC1259P; red histogram), a PE-conjugated Mouse Anti-Human/Mouse SOX2 Monoclonal Antibody (Catalog # IC2018P; green histogram), or a PE-conjugated Mouse IgG_{2A} Isotype Control (Catalog # IC003P; open histogram). Under these conditions, cells were shown to express high levels of Nestin and SOX2, two established markers of neural multipotency.



Verification of Neural Progenitor Cell Multipotency Following Expansion with N-2 MAX Media Supplement. Rat Cortical Stem Cells (Catalog # NSC001) were grown and differentiated for 7 days *in vitro* in media supplemented with N-2 MAX Media Supplement (Catalog # AR009). Markers of lineage differentiation were detected using a Mouse Anti-Neuron-specific β-III Tubulin Monoclonal (clone TuJ-1) Antibody (Catalog # MAB1195), followed by a NorthernLights™ (NL)557-conjugated Donkey Anti-Mouse Secondary Antibody (Catalog # NL007; red), a Sheep Anti-Human GFAP Antigen Affinity-purified Polyclonal Antibody (Catalog # AF2594), followed by a NL557-conjugated Donkey Anti-Sheep Secondary Antibody (Catalog # NL010; red), and a Mouse Anti-Human/Mouse/Rat/Chicken Oligodendrocyte Marker O4 Monoclonal Antibody (Catalog # MAB1326), followed by a NL 557-conjugated Goat Anti-Mouse Secondary Antibody (Catalog # NL019; red). The nuclei were counterstained with DAPI (blue). View our protocol for Fluorescent ICC Staining of Stem Cells on Coverslips.

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