

**Jobelyn™** is produced from a unique variety of *Sorghum bicolor*, recently domesticated from a West African wild variety, representing original genetic makeup and not a result of intense breeding efforts. **Jobelyn™** is an extract derived specifically from the intensely colored leaf sheathes.

*Sorghum bicolor* is a species of grass, traditionally cultivated for its nutritious grain. Sorghum is now grown in many tropical and subtropical regions of the world, and is gaining increased popularity as a non-gluten grain. Historical uses of Sorghum include food, hot teas, beers, and traditional medicinal extracts.

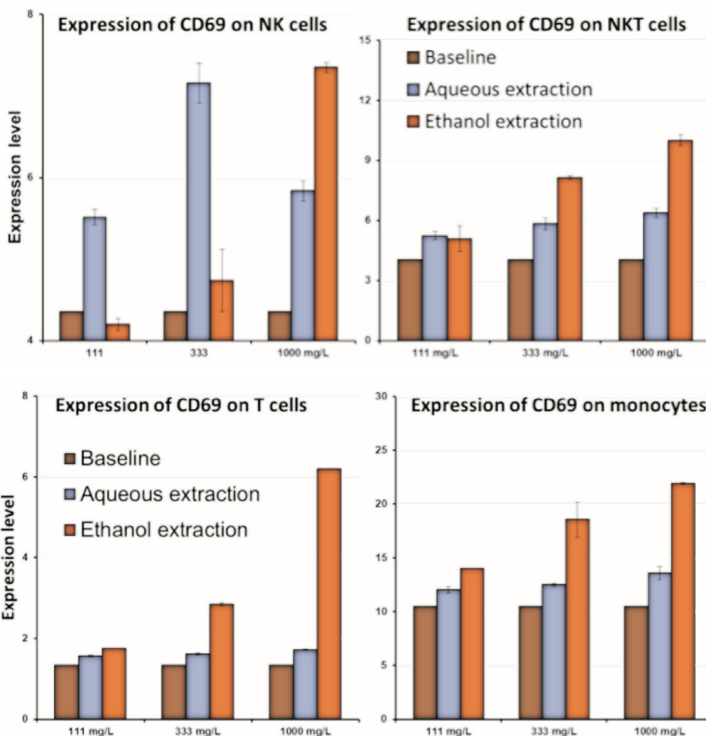
**Health benefits include:**

- Multi-faceted anti-inflammatory properties
- Immune activation
- Hematopoietic effects
- Pain reduction

**Jobelyn™** is GRAS-certified by the FDA. **Jobelyn™** has an unusual chemical profile compared to other variants of *Sorghum bicolor*. It has a very high content of unique antioxidant polyphenols, including unique dimeric 3-deoxyanthocyanidins. Given the traditional use of Sorghum-based products, including teas, in prevention of viral illness, **Jobelyn™** was tested for immune activating properties in laboratory tests.

Our immune system is not limited to a given organ or tissue, but is widespread throughout our body, blood, skin, and mucosal barriers. Immune cells, when activated, communicate in various ways by:

- Expressing receptors on cell surfaces to receive signals
- Secreting compounds to send signals to other cells.



Cytokine	Fold Increase
IL-1R alpha	8
IL-6	174
IL-7	6
IL-8	13
IL-10	15
IL-12	5
IL-13	5
IL-15	9
MCP1	145
MIP-1alpha	241
MIP-1 beta	168
RANTES	2
IFN-alpha	12

**Jobelyn™** treatment of human immune cells resulted in increased expression of the CD69 activation marker on the cell surface of Natural Killer cells, NKT cells, T lymphocytes, and monocytes. The cytokine profile in these cell cultures showed up-regulation of multiple cytokines, including several chemokines known to be involved in anti-viral immune defenses.