Review of scientific results on biological and clinical activities

Several research publications show that pomegranate is active and helps to maintain good health. Briefly, scientific publications show that pomegranate and pomegranate components are important for:

1. Inhibition of inflammation

- Pomegranate inhibits nuclear transcription factor kappa B (Nf-kappaB) – a key player in induction of inflammatory responses.

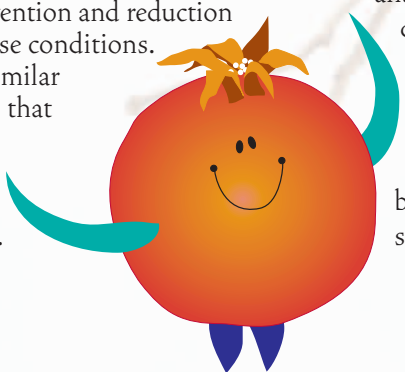
2. Prevention of chemically-induced cancer development (breast, prostate) in various experimental models

- Pomegranate inhibits proliferation of breast and prostate cancer cells in vitro.
- Pomegranate inhibits metastasis of cancer cells in vitro.
- Pomegranate was found helpful during chemotherapy of prostate cancer in humans.
- Pomegranate shows anti-angiogenic activity in vitro.

These observations indicate rather broad mechanisms of action on cancer cells. From one angle, pomegranate inhibits multiplication of cancer cells in vitro, from another one, cancer cells can not grow in 3D and this result strongly suggests an anti-metastasis effect. In addition, pomegranate inhibits development of microvessels induced by cancer cells and this feature is a key one in the process of tumor mass growth.

3. Reducing anti-oxidative stress

- Pomegranate inhibits oxidation of LDL, reduces hypertension and reduces common carotid intima-media thickness in humans. It makes pomegranate well-suited for the prevention and reduction of cardiovascular disease conditions. Other studies report similar results which conclude that pomegranate is potent in the prevention of LDL oxidation and reducing hypertension.



4. Reducing bacterial, fungal and viral infections

- Pomegranate significantly reduces the clinical sign of periodontitis. Other studies show that the growth of Staphylococcus aureus is inhibited by pomegranate.
- Pomegranate inhibits candidosis associated with denture stomatitis.
- Pomegranate inhibits entry of the HIV virus into human cells. Substances found in pomegranate binds the virus entity which prevents the virus from invading human cells. This makes pomegranate a powerful ingredient for the development of gel-like products for the prevention of sexually transmitted HIV infection.

5. Showing neuroprotective activity

- Pomegranate prevents and reduces symptoms of hypoxic-ischemic brain damage.

It could be concluded, based on present scientific knowledge, that a variety of the health benefits of pomegranate are due to its combined anti-inflammatory and anti-oxidative potency.

Most of the health conditions mentioned above depend on proper oxidative balance within the body and reduced inflammation status as well. Moreover, several oxidized molecules in the body may trigger inflammatory response, for example oxidized LDL. On the other hand, the role of inflammation and antioxidants is well defined in the process of cancer development and progression. Finally, reduction of bacterial and HIV infections is unlikely related to the anti-oxidative and anti-inflammatory potency of pomegranate. It is rather related to another class of compounds capable of binding bacteria or HIV virus, preventing from further spread and propagation within the host body.

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