

## Texte à usage exclusif des professionnels de la santé !

### La Punicalagine au centre des intérêts


Ce polyphénol antioxydant très abondant dans le jus de Grenade a en effet la capacité d'inhiber le virus de la grippe.

Selon une étude du Texas Health Science Center à Houston, l'extrait de polyphénols du grenadier (*Punica granatum*) a des propriétés anti-grippales, ce dernier "inhibant la réplication du virus de la grippe A dans les cellules MDCK".

Dans les 4 polyphénols étudiés, c'est en fait la punicalagine qui est le composant anti-grippal, ce dernier empêchant notamment la réplication de l'ARN du virus. L'étude indique aussi que l'extrait de polyphénols du grenadier combiné à l'oséltamivir, médicament antiviral utilisé pour le traitement et la prévention des gripes A et B et distribué sous la marque Tamiflu, augmente son action anti-grippale.

Selon la Société Française des Antioxydants, "la grenade est l'un des végétaux les plus riches en antioxydants (polyphénols solubles, tanins, anthocyanes) qui détruisent les espèces réactives et aident à protéger l'ADN contre diverses dégradations à l'origine de nombreuses pathologies sévères comme les maladies cardio-vasculaires et le cancer".

Etude : Pomegranate (*Punica granatum*) purified polyphenol extract inhibits influenza virus and has a synergistic effect with oseltamivir. University of Texas Health Science Center at Houston, USA; Texas Heart Institute, 6770 Bertner Ave., MC 2-255, Houston, TX 77030, USA.

1: [Phytomedicine](#). 2009 Jul 6. [Epub ahead of print]  [FULL-TEXT ARTICLE](#) [Links](#)

### **Pomegranate (*Punica granatum*) purified polyphenol extract inhibits influenza virus and has a synergistic effect with oseltamivir.**

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Influenza epidemics cause numerous deaths and millions of hospitalizations each year. Because of the alarming emergence of resistance to anti-influenza drugs, there is a need to identify new naturally occurring antiviral molecules. We tested the hypothesis that pomegranate polyphenol extract (PPE) has anti-influenza properties. Using real time PCR, plaque assay, and TCID 50% hemagglutination assay, we have shown that PPE suppresses replication of influenza A virus in MDCK cells. PPE inhibits agglutination of chicken red blood cells (cRBC) by influenza virus and is virucidal. The single-cycle growth conditions indicated that independent of the virucidal effect PPE also inhibits viral RNA replication. PPE did not alter virus ribonucleoprotein (RNP) entry into nucleus or translocation of virus RNP from nucleus to cytoplasm in MDCK cells. We evaluated four major Polyphenols in PPE (ellagic acid, caffeic acid, luteolin, and punicalagin) and demonstrated that punicalagin is the effective,

anti-influenza component of PPE. Punicalagin blocked replication of the virus RNA, inhibited agglutination of chicken RBC's by the virus and had virucidal effects. Furthermore, the combination of PPE and oseltamivir synergistically increased the anti-influenza effect of oseltamivir. In conclusion, PPE inhibited the replication of human influenza A/Hong Kong (H3N2) in vitro. Pomegranate extracts should be further studied for therapeutic and prophylactic potential especially for influenza epidemics and pandemics.

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### Pomegranate (*Punica granatum*) purified polyphenol extract inhibits influenza virus

#### Abstract

Influenza epidemics cause numerous deaths and millions of hospitalizations each year. Because of the alarming emergence of resistance to anti-influenza drugs, there is a need to identify new naturally occurring antiviral molecules. We tested the hypothesis that pomegranate polyphenol extract (PPE) has anti-influenza properties. Using real time PCR, plaque assay, and TCID 50% hemagglutination assay, we have shown that PPE suppresses replication of influenza A virus in MDCK cells. PPE inhibits agglutination of chicken red blood cells (cRBC) by influenza virus and is virucidal. The single-cycle growth conditions indicated that independent of the virucidal effect PPE also inhibits viral RNA replication. PPE did not alter virus ribonucleoprotein (RNP) entry into nucleus or translocation of virus RNP from nucleus to cytoplasm in MDCK cells. We evaluated four major Polyphenols in PPE (ellagic acid, caffeic acid, luteolin, and punicalagin) and demonstrated that punicalagin is the effective, anti-influenza component of PPE. Punicalagin blocked replication of the virus RNA, inhibited agglutination of chicken RBC's by the virus and had virucidal effects. Furthermore, the combination of PPE and oseltamivir synergistically increased the anti-influenza effect of oseltamivir. In conclusion, PPE inhibited the replication of human influenza A/Hong Kong (H3N2) in vitro. Pomegranate extracts should be further studied for therapeutic and prophylactic potential especially for influenza epidemics and pandemics.

**Keywords:** Influenza; Pomegranate; *Punica granatum*; Punicalagin; Anti-influenza; Synergism

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