

## APPLICATIONS

- Detoxification Support
- Neurological Support
- Microbial Support
- Antioxidant Support
- Gastrointestinal Support



## INTRODUCTION

Burbur Pinella is a hydro-ethanol extract from the leaves of *Burbur*™ (*Desmodium molliculum*) and the stems of *Pinella*™ (*Pimpinella spp.*). *D. molliculum* is in the Fabaceae family, and is native to South America. *D. molliculum* contains polyphenols, flavonoids, and reducing sugar, in addition to alkaloids, flavonol glycosides, saponins, and tannins.<sup>1</sup> The flavonoids include quercetin 3-glucuronide, rutin, and luteolin, among others.<sup>2</sup> *Pimpinella spp.* belong to the Apiaceae/Umbelliferae family, the most well-known of which is *Pimpinella anisum*, or aniseed. *P. anisum* contains volatile oils such as trans-anethole and eugenol; fatty acids such as palmitic and oleic acids; 18% mass of protein; and 4% mass of carbohydrate.<sup>2</sup> Anethole may have phytoestrogenic effects.\*<sup>3,4</sup> According to research, the whole plant may consist of up to 57.4% trans-anethole.<sup>2</sup>

*Burbur Pinella* is made at our U.S. manufacturing facility using a specialized proprietary extraction process that optimizes the constituents of the herbs in their original, unprocessed state to obtain broad-spectrum concentration. Because our extracts are made in our own facility, we control all aspects of quality, including stringent ID testing, microbial testing, and heavy metal testing. NutraMedix rigorously follows current good manufacturing practices (cGMP), as do our suppliers.

## DETOXIFICATION SUPPORT

Both *D. molliculum* and *P. anisum* may help to promote the body's natural detoxification systems, and may help to support and maintain liver health.\*<sup>5,6</sup> Additionally, *P. anisum* may help to support kidney health, and may help to maintain levels of urea, uric acid, and creatinine that are already within the normal range.<sup>7</sup>

## NEUROLOGICAL SUPPORT

The constituent eugenol, found in *P. anisum*, may help to support neurological health, and may help to maintain brain electrical discharges already within the normal range.\*<sup>8</sup> *P. anisum* may also help to maintain neurological health by supporting healthy neuroplasticity.\*<sup>9</sup>

## OTHER USES

### Microbial Support

*D. molliculum* ethanol extract may help with microbial and mycelial support.\*<sup>10,11</sup> *P. anisum* may help with diverse microbial support, some of which may be attributed to its lignin-carbohydrate complexes.\*<sup>12,13</sup> These complexes may also help to support a normal macrophage response and maintain healthy, balanced immunity.\*<sup>15</sup>

### Antioxidant Support

The aerial parts of *D. molliculum* may contribute antioxidant support to help with everyday oxidative stress.\*<sup>14</sup> *Pimpinella spp.* may also help with antioxidant support, as assessed by thiocyanate and DPPH scavenging methods.\*<sup>12,15,16</sup> Of the four oleoresins tested, the methanol and ethanol oleoresins were found to contribute the most antioxidant support.\*<sup>16</sup>

### Gastrointestinal Support

*P. anisum* may help with gastrointestinal support through maintaining healthy gastric mucosa.\*<sup>17</sup> It may also help to support a healthy microbiome,\*<sup>18,19</sup> help to support normal gastrointestinal motility, and help to maintain healthy gastrointestinal function.\*<sup>20</sup>

## SAFETY AND CAUTIONS

*D. molliculum* is used in the traditional herbal medicine of South America. *D. molliculum* was determined to be non-toxic in a mouse study following the OECD (Organization for Economic Cooperation and Development) 423 test guidelines.<sup>21</sup> In another mouse study, there were no signs of toxicity in mice in doses up to 2000 mg/kg.<sup>22</sup> The average human dose is 40 drops or 2.0 ml dissolved in water, which is approximately 0.000277 mg/kg of body weight.<sup>21</sup> There have been only two case reports of side effects, one involving a severe skin rash in a 72-year-old female, and the other involving mild dizziness and confusion in a 62-year-old female.<sup>23</sup>

There have been reports of allergic reactions to *P. anisum*, which may include dermatologic, respiratory, or gastrointestinal symptoms.<sup>24</sup> *P. anisum* may inhibit implantation and therefore should not be used when attempting to conceive.<sup>4</sup> The constituent anethole may have estrogenic effects.<sup>3,4,25</sup> The alcohol extract should be avoided in pregnancy.<sup>4</sup> *P. anisum* may increase the effects of hypoglycemic drugs or decrease the effects of fluoxetine and imipramine. Theoretically, its estrogenic effects may interfere with contraceptives, hormone replacement, or tamoxifen.<sup>26</sup>

Safety not documented in breastfeeding or pregnant women, or in children under 3 years of age due to insufficient safety research.

\* This statement has not been evaluated by the Food and Drug Administration. This product is not intended to treat, cure, or prevent any diseases.



## REFERENCES

- <sup>1</sup> Seriki, S. A., Odetola, A. O., & Adebayo O. F. (2019). *American Journal of Biomedical Science & Research*, 2(4).
- <sup>2</sup> Shojaii, A., & Abdollahi Fard, M. (2012). *ISRN Pharmaceutics*, 2012, 510795.
- <sup>3</sup> Anise. (2021). In *Drugs and lactation Database (LactMed)*. National Library of Medicine (US).
- <sup>4</sup> Gardner, Z., & McGuffin, M. (2013). *American Herbal Products Association botanical safety handbook* (2nd ed, pp. 657-659). CRC Press.
- <sup>5</sup> Gordillo, G., Bonilla, P., et al. (2019). *Revista Peruana de Medicina Integrativa*, 4(3), 76-82.
- <sup>6</sup> Asadollahpoor, A., Abdollahi, M., & Rahimi, R. (2017). *Journal of Research in Medical Sciences: The official journal of Isfahan University of Medical Sciences*, 22, 37.
- <sup>7</sup> Amina, B., Nadia, A. H., et al. (2016). *International Journal of Green Pharmacy*, 10(2), 91.
- <sup>8</sup> Pourgholami, M. H., Majzoob, S., et al. (1999). *Journal of Ethnopharmacology*, 66, 211-215.
- <sup>9</sup> Karimzadeh, F., Hosseini, M., et al. (2012). *BMC Complementary and Alternative Medicine*, 12(76).
- <sup>10</sup> Rojas, R., Bustamante, B., et al. (2003). *Journal of Ethnopharmacology*, 88, 199-204.
- <sup>11</sup> Bussman, R. W., Sharon, D., et al. (2008). *Arnoldoa*, 15(1), 127-148.
- <sup>12</sup> Gülcin, I., Oktay, M., et al. (2003). *Food Chemistry*, 83, 371-382.
- <sup>13</sup> Lee, J. B., Yamagishi, C., et al. (2011). *Bioscience, Biotechnology, and Biochemistry*, 75(3), 459-465.
- <sup>14</sup> Lock, O., Castillo, P., et al. (2005). *Acta Horticulturae* 675(675), 103-106.
- <sup>15</sup> Delazar, A., Biglari, F., et al. (2006). *Phytochemistry*, 67(19), 2176-2181.
- <sup>16</sup> Singh, G., Kapoor, I. P. S., et al. (2008). *International Journal of Essential Oil Therapeutics*, 2, 122-130.
- <sup>17</sup> Al Mofleh, I. A., Alhaider, A. A., et al. (2007). *World Journal of Gastroenterology*, 13(7), 1112-1118.
- <sup>18</sup> Robles-Zepeda, R. E., Velázquez-Contreras, C. A., et al. (2011). *Journal of Medicinal Food*, 14(10), 1280-1283.
- <sup>19</sup> Wang, D., Li, Y., Zhong, H., et al. (2019). *FEBS Open Bio*, 9(9), 1552-1560.
- <sup>20</sup> Mosaffa-Jahromi, M., Lankarani, K. B., et al. (2016). *Journal of Ethnopharmacology*, 194, 937-946.
- <sup>21</sup> Herrera, W., & Simón, G. G. (2005). NutraMedix Laboratories, LLC, Florida, USA.
- <sup>22</sup> Gordillo, G., Bonilla, P., et al. (2019). *Ciencia E Investigación*, 22(1), 31-34.
- <sup>23</sup> Mendocilla-Risco, M., Bellido-Marin, B., & Serrano-Mestanza, K. (2017). *Revista Peruana de Medicina Integrativa*, 2(2): 108-110.
- <sup>24</sup> Brinker, F. (2001). *Herb contraindications & drug interactions* (3rd ed, p. 31). Eclectic Medical Publications.
- <sup>25</sup> Zablocka-Słowińska, K., Jawna, K., et al. (2014). *Advances in Clinical and Experimental Medicine: Official organ Wroclaw Medical University*, 23(4), 657-663.
- <sup>26</sup> American Botanical Council. *HerbalGram.org*. (2021). Retrieved 10 June 2021, from <https://www.herbalgram.org/resources/commission-e-monographs/approved-herbs/anise-seed/>.