

# nArt v 1 Information Sheet

## Background

Mugwort (*Artemisia vulgaris*) is one of the main causes of seasonal pollinosis in Europe and is also found throughout the Northern Hemisphere.<sup>1</sup> Six mugwort pollen allergens have been identified (Art v 1, Art v 2, Art v 3, Art v 4, Art v 5, Art v 6).<sup>2</sup> Art v 1, a glycoprotein, has an approximate molecular weight of 24-28kD and appears as a double-band due to its heterogenous glycosylation.<sup>1</sup> Native Art v 1 is preferred over the recombinant molecule produced by *E. coli* due to only 30-50% recognition by nArt v 1 positive sera.<sup>3</sup> Art v 1 is a major allergenic protein of mugwort pollen that is recognized by more than 70% of mugwort-sensitized patient IgE.<sup>4</sup> A homologous protein in ragweed (Amb a 4) has been identified.<sup>5</sup>



## Biochemical Characteristics

Native Art v 1 (nArt v 1) protein was purified to homogeneity from mugwort (*Artemisia vulgaris*) pollen.

## Testing Algorithm<sup>6</sup>

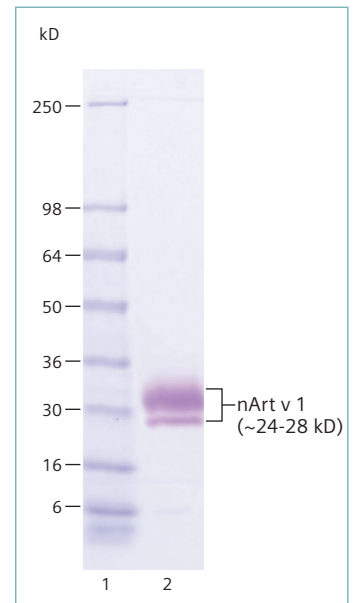
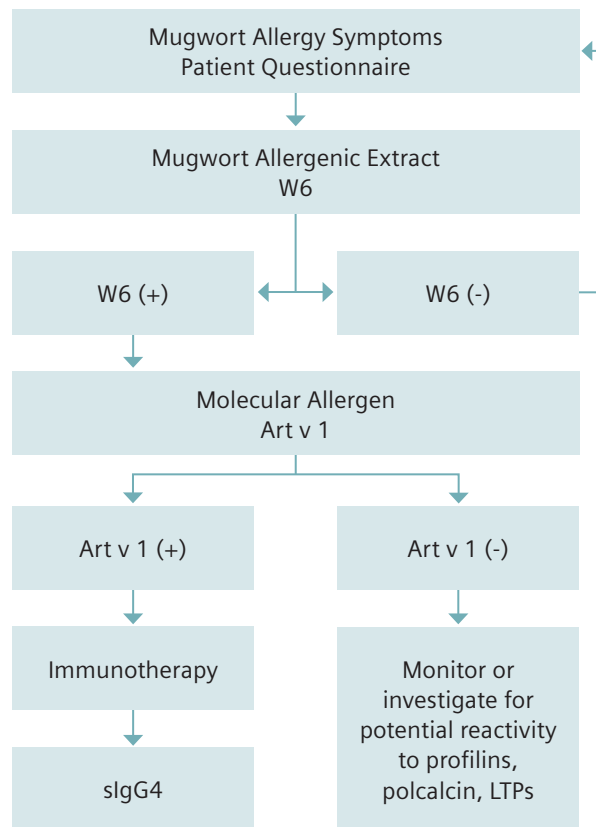


Figure 1. Coomassie Blue stained gel.

## IMMULITE 2000/XPi 3gAllergy Specific IgE

Mugwort Pollen Major Allergen, nArt v 1 (*Artemisia vulgaris*, Code A753L2)

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## Clinical Performance

Clinical performance was demonstrated by testing serum samples from clinically diagnosed atopic and apparently healthy individuals against the nArt v 1 specific allergen. The results were obtained using the IMMULITE® 2000 3gAllergy™ Specific IgE assay. Overall agreement, sensitivity, and specificity are presented in the cross table below.

### Allergen: nArt v 1

IMMULITE 2000			
	Clinical	Normal	Total
Positive ( $\geq 0.10$ kU/L)	20	7	27
Negative	10	93	103
<b>Total</b>	<b>30</b>	<b>100</b>	<b>130</b>

Sensitivity (95% Confidence Interval)	Specificity (95% Confidence Interval)	Overall Agreement
67% (50% to 84%)	93% (88% to 100%)	87%

Additional clinical performance of the nArt v 1 specific allergen was demonstrated in comparison to the whole extract allergen W6 (Mugwort). A total of 142 samples were tested with A753 and W6. The results are presented below.

### Allergen: nArt v 1

IMMULITE 2000			
	W6 (Ref. Method)		
<b>A753 (Test Method)</b>	25	23	Positive
	2	92	Negative
	Positive	Negative	

**N=142**

Overall percent agreement = 83%  
 Positive percent agreement = 93%  
 Negative percent agreement = 80%

## Analytical Performance

**Precision:** The average within-run and total precision using three samples and three lots of nArt v 1 allergen was 5.46% and 6.73%, respectively.

**Linearity:** Two samples were diluted in 2-fold serial dilutions. The undiluted (neat) and the diluted samples were assayed in two replicates and the observed value was reported based on the average of the two replicates. Comparisons of the observed to expected values were used to demonstrate linearity at concentrations within the assay limits.

**Observed = 1.004 (Expected) + 0.3830**

Slope (95% Confidence Interval) = 1.004 (0.972 to 1.035)

### References:

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- Jimeno L, Duffort O, Serrano C, Barber D, Polo F. Monoclonal antibody-based ELISA to quantify the major allergen of *Artemisia vulgaris* pollen, Art v 1. *Allergy* 2004 Sep;59(9):995-1001.
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